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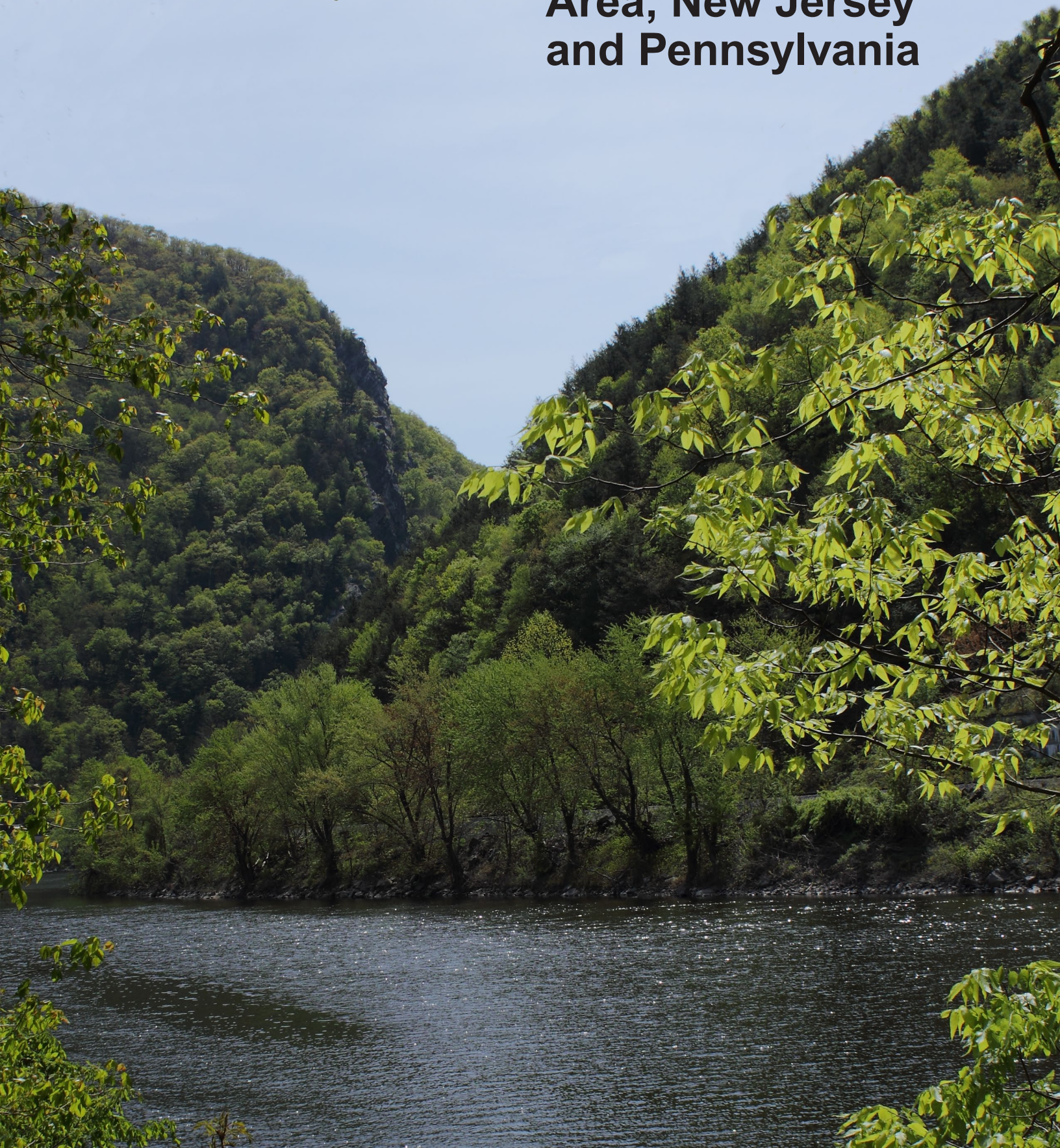


United States  
Department of  
the Interior



National Park  
Service

# Soil Survey of Delaware Water Gap National Recreation Area, New Jersey and Pennsylvania









# How To Use This Soil Survey

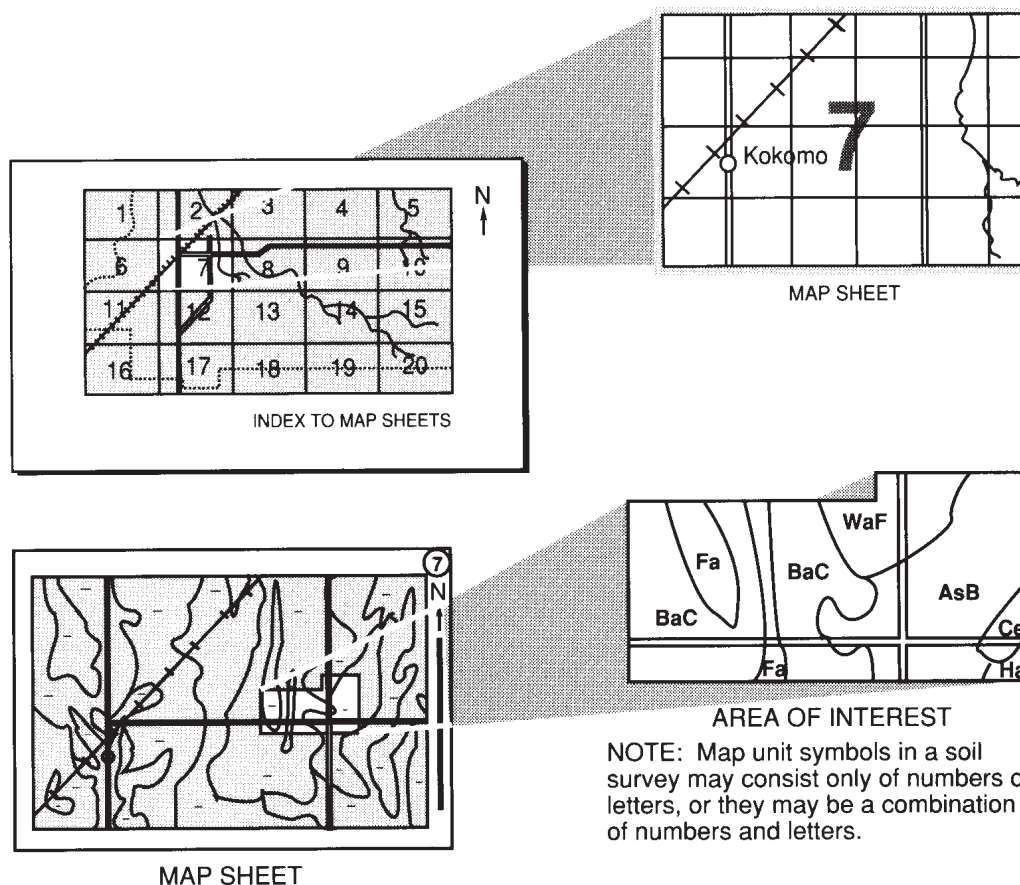
## Detailed Soil Maps

The detailed soil maps can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**. Note the number of the map sheet and turn to that sheet.

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the **Contents**, which lists the map units by symbol and name and shows the page where each map unit is described.

The **Contents** shows which table has data on a specific land use for each detailed soil map unit. Also see the **Contents** for sections of this publication that may address your specific needs.





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## National Cooperative Soil Survey

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service has leadership for the Federal part of the National Cooperative Soil Survey.

The soil maps in this survey may be copied without permission. Enlargement of the maps, however, could cause misunderstanding of the detail of mapping. If enlarged, the maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

## Citation

The recommended citation for this survey is:

United States Department of Agriculture, Natural Resources Conservation Service, and United States Department of the Interior, National Park Service. 2013. Soil survey of Delaware Water Gap National Recreation Area, New Jersey and Pennsylvania. [http://soils.usda.gov/survey/printed\\_surveys](http://soils.usda.gov/survey/printed_surveys).

## Cover Caption

The Delaware Water Gap along the New Jersey-Pennsylvania border. The geologic formations and geomorphic processes that created the gap also determined the types of soils found in the park. The steep areas along the river consist of Rock outcrop-Arnot-Rubble land complex, 60 to 80 percent slopes. The Arnot soil is shallow and rock-filled. It is derived from residuum and colluvium.

*Additional information about the Nation's natural resources is available online from the Natural Resources Conservation Service at <http://www.nrcs.usda.gov/>.*



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# Preface

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This soil survey was developed in conjunction with the National Park Service's Soil Inventory and Monitoring Program and is intended to serve as the official source document for soils occurring within Delaware Water Gap National Recreation Area.

This soil survey contains information that affects current and future land use planning in the park. It contains predictions of soil behavior for selected land uses. The survey highlights soil limitations, actions needed to overcome the limitations, and the impact of selected land uses on the environment. It is designed to meet the needs of the National Park Service and its partners to better understand the properties of the soils in the park and the effects of these soil properties on various natural ecological characteristics. This knowledge can help the National Park Service and its partners to understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. The location of each map unit is shown on the detailed soil maps. Each soil in the survey area is described, and information on specific uses is given. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or at the local headquarters of the National Park Service.



# **Soil Survey of Delaware Water Gap National Recreation Area, New Jersey and Pennsylvania**

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United States Department of Agriculture, Natural Resources  
Conservation Service, and United States Department of the Interior,  
National Park Service

Delaware Water Gap National Recreation Area is located along the Delaware River in New Jersey and Pennsylvania (fig. 1). This survey was made in conjunction with the National Park Service's Soil Inventory and Monitoring Program to provide information about the soils and miscellaneous areas within Delaware Water Gap National Recreation Area.

## **How This Survey Was Made**

The soil survey data was extracted in May 2012 from county-based soil survey data for Pike, Monroe, and Northampton Counties in Pennsylvania and for Warren and Sussex Counties in New Jersey. The project scale was 1:24,000 for Sussex and Pike Counties, 1:20,000 for Monroe County, and 1:12,000 for Northampton and Warren Counties. Correlation dates range from 1975 to 2007. Quality assurance for the data regarding Northampton County was performed at the soil survey regional office in Morgantown, West Virginia. Quality assurance for the rest of the data was performed at the soil survey regional office in Amherst, Massachusetts. A total of 236 map units are included in this survey, including 611 named components. Because data was clipped from more than one county-based set of soil maps, this survey includes some detailed soil map units that have the same name but different map symbols and properties. Water units were combined.

The information in this survey includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.



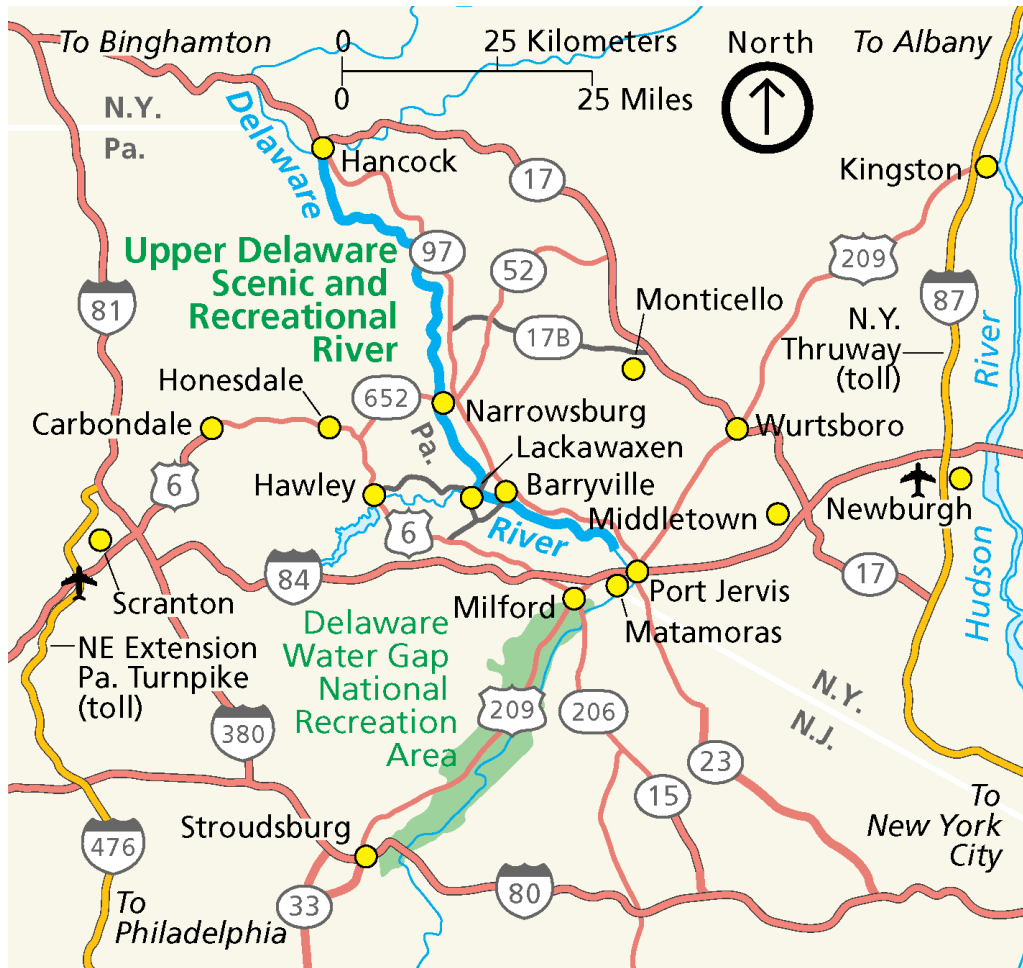


Figure 1.—Location of Delaware Water Gap National Recreation Area near the New Jersey, New York, and Pennsylvania borders.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units).

Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

## Soil Survey of Delaware Water Gap National Recreation Area

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they delineated the boundaries of these bodies on digital imagery and identified each as a specific map unit.



# Detailed Soil Map Units

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The map units delineated on the detailed soil map in this survey represent the soils or miscellaneous areas in the park. The map unit descriptions in this section, along with the soil maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The contrasting components are mentioned in the map unit descriptions. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit.

Soils that have profiles that are almost alike make up a *soil series*. All the soils of a series have major horizons that are similar in composition, thickness, and arrangement. The soils of a given series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name



of a soil phase commonly indicates a feature that affects use or management. For example, Bath channery silt loam, 3 to 8 percent slopes, is a phase of the Bath series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Hoosic-Otisville complex, 25 to 60 percent slopes, very stony, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alvira and Watson very stony loams, 0 to 12 percent slopes, is an undifferentiated group in this survey area.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Urban land is an example.

Table 1 lists each map unit in the park, its major and minor components, and the percentage of each component in the unit. Because not all minor components were fully identified at the time of mapping, the map unit compositions do not add up to 100 percent for all units in the table and in the map unit descriptions. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

## **290836—Hoosic-Otisville complex, 25 to 60 percent slopes, very stony**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 800 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Hoosic, very stony, and similar soils: 50 percent

Otisville, very stony, and similar soils: 40 percent

Dissimilar minor components: 10 percent

### ***Description of Hoosic, Very Stony, Soil***

#### **Soil Classification**

Sandy-skeletal, mixed, mesic Humic Dystrudepts

#### **Setting**

*Landscape:* Outwash plains

*Landform:* Valley trains

*Slope:* 25 to 60 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Low

*Parent material:* Glaciofluvial deposits derived from sandstone and shale

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Somewhat excessively drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.5 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7e

*Hydric soil status:* No

*Hydrologic soil group:* B

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

Ap—1 to 9 inches; gravelly loam

Bw—9 to 21 inches; very gravelly coarse sandy loam

2C1—21 to 27 inches; extremely gravelly loamy coarse sand

2C2—27 to 37 inches; extremely gravelly coarse sand

2C3—37 to 49 inches; extremely gravelly coarse sand

2C4—49 to 60 inches; extremely gravelly coarse sand

***Description of Otisville, Very Stony, Soil***

**Soil Classification**

Sandy-skeletal, mixed, mesic Typic Udorthents

**Setting**

*Landscape:* Outwash plains

*Landform:* Valley trains

*Slope:* 25 to 60 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Low

*Parent material:* Glaciofluvial deposits derived from sandstone and shale

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Excessively drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 2.7 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* A

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material  
A—1 to 2 inches; gravelly sandy loam  
Bw1—2 to 7 inches; very gravelly loamy sand  
Bw2—7 to 11 inches; very gravelly loamy coarse sand  
BC—11 to 19 inches; very gravelly loamy coarse sand  
C1—19 to 31 inches; extremely gravelly coarse sand  
C2—31 to 43 inches; extremely gravelly coarse sand  
C3—43 to 60 inches; stratified sand to loamy sand

***Minor Components***

**Hazen, very stony**

*Percent of map unit:* 10 percent  
*Landform:* Valley trains  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 25 to 60 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil status:* No

**296265—Alden mucky silt loam**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 295 to 1,495 feet  
*Mean annual precipitation:* 30 to 45 inches  
*Mean annual air temperature:* 46 to 50 degrees F  
*Frost-free period:* 140 to 180 days

***Map Unit Composition***

Alden and similar soils: 100 percent

***Description of Alden Soil***

**Soil Classification**

Fine-loamy, mixed, active, nonacid, mesic Mollic Endoaquepts

**Setting**

*Landform:* Depressions on till plains  
*Landform position (two-dimensional):* Summit, footslope  
*Landform position (three-dimensional):* Head slope, base slope, interfluvium  
*Slope:* 0 to 3 percent  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* Negligible  
*Parent material:* Till  
*Restrictive feature(s):* None within a depth of 60 inches  
*Frequency of flooding:* None

*Frequency of ponding:* Frequent  
*Depth to water table:* At the surface  
*Drainage class:* Very poorly drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* High (about 9.1 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 4w  
*Hydric soil status:* Yes  
*Hydrologic soil group:* D

**Typical Profile**

0 to 9 inches; mucky silt loam  
9 to 35 inches; silty clay loam  
35 to 60 inches; gravelly loam

## **296269—Alluvial land**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 200 to 1,000 feet  
*Mean annual precipitation:* 30 to 45 inches  
*Mean annual air temperature:* 45 to 55 degrees F  
*Frost-free period:* 130 to 200 days

***Map Unit Composition***

Fluents (alluvial land) and similar soils: 70 percent  
Dissimilar minor components: 20 percent

***Description of Fluents (Alluvial Land)***

**Soil Classification**

Fluents

**Setting**

*Landform:* Flood plains  
*Slope:* 0 to 3 percent  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects

**Properties and Qualities**

*Runoff:* Very high  
*Parent material:* Alluvium  
*Restrictive feature(s):* None within a depth of 60 inches  
*Frequency of flooding:* Frequent  
*Frequency of ponding:* None  
*Depth to water table:* At the surface to a depth of 36 inches  
*Drainage class:* Moderately well drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Low (about 6.0 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 8s

*Hydric soil status:* No  
*Hydrologic soil group:* C/D

**Typical Profile**

0 to 6 inches; sandy loam  
6 to 42 inches; sandy loam  
42 to 60 inches; gravelly silt loam

**Minor Components**

**Holly**

*Percent of map unit:* 20 percent  
*Landform:* Depressions on flood plains, backswamps  
*Geomorphic position (two-dimensional):* Toeslope  
*Geomorphic position (three-dimensional):* Base slope  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 0 to 3 percent  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear  
*Hydric soil status:* Yes

**296271—Alvira and Watson very stony loams, 0 to 12 percent slopes**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Mean annual precipitation:* 34 to 56 inches  
*Mean annual air temperature:* 40 to 54 degrees F  
*Frost-free period:* 100 to 160 days

**Map Unit Composition**

Alvira and similar soils: 55 percent  
Watson and similar soils: 35 percent  
Dissimilar minor components: 10 percent

**Description of Alvira Soil**

**Soil Classification**

Fine-loamy, mixed, active, mesic Aeric Fragiaquults

**Setting**

*Landform:* Glaciated hillslopes  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Interfluve  
*Slope:* 0 to 12 percent  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* Very high  
*Parent material:* Till  
*Restrictive feature(s):* Fragipan at a depth of 15 to 28 inches



## Soil Survey of Delaware Water Gap National Recreation Area

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 6 to 18 inches (perched)

*Drainage class:* Somewhat poorly drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 7.3 inches)

### **Interpretive Groups**

*Land capability classification (nonirrigated):* 6s

*Hydric soil status:* No

*Hydrologic soil group:* C

### **Typical Profile**

0 to 10 inches; gravelly loam

10 to 21 inches; gravelly silt loam

21 to 60 inches; very gravelly silt loam

## ***Description of Watson Soil***

### **Soil Classification**

Fine-loamy, mixed, active, mesic Typic Fragiudults

### **Setting**

*Landform:* Valley sides

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Base slope

*Slope:* 0 to 12 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

### **Properties and Qualities**

*Runoff:* Very high

*Parent material:* Old till derived from sedimentary rock

*Restrictive feature(s):* Fragipan at a depth of 18 to 32 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 18 to 36 inches (perched)

*Drainage class:* Moderately well drained

*Shrink-swell potential:* Moderate (about 4.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 7.2 inches)

### **Interpretive Groups**

*Land capability classification (nonirrigated):* 6s

*Hydric soil status:* No

*Hydrologic soil group:* C

### **Typical Profile**

0 to 10 inches; gravelly loam

10 to 27 inches; gravelly silty clay loam

27 to 60 inches; gravelly clay loam

## ***Minor Components***

### **Shelmadine**

*Percent of map unit:* 10 percent

*Landform:* Depressions  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 0 to 3 percent  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil status:* Yes

## **296272—Bath channery silt loam, 3 to 8 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 800 to 1,800 feet  
*Mean annual precipitation:* 30 to 50 inches  
*Mean annual air temperature:* 45 to 50 degrees F  
*Frost-free period:* 110 to 165 days

### ***Map Unit Composition***

Bath and similar soils: 85 percent  
Dissimilar minor components: 10 percent

### ***Description of Bath Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landform:* Glaciated mountains  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Upper third of mountain flank, side slope  
*Slope:* 3 to 8 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* High  
*Restrictive feature(s):* Fragipan at a depth of 21 to 38 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* About 21 to 36 inches (perched)  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Low (about 5.1 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 2e  
*Hydric soil status:* No  
*Hydrologic soil group:* C

#### **Typical Profile**

0 to 8 inches; channery silt loam

8 to 27 inches; channery silt loam  
27 to 60 inches; channery silt loam  
60 to 64 inches; very channery loam

### ***Minor Components***

#### **Lackawanna**

*Percent of map unit:* 5 percent  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 3 to 8 percent  
*Hydric soil status:* No

#### **Mardin**

*Percent of map unit:* 5 percent  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 3 to 8 percent  
*Hydric soil status:* No

## **296273—Bath channery silt loam, 8 to 15 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 800 to 1,800 feet  
*Mean annual precipitation:* 30 to 50 inches  
*Mean annual air temperature:* 45 to 50 degrees F  
*Frost-free period:* 110 to 165 days

### ***Map Unit Composition***

Bath and similar soils: 85 percent  
Dissimilar minor components: 10 percent

### ***Description of Bath Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landform:* Glaciated mountains  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Upper third of mountain flank, side slope  
*Slope:* 8 to 15 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* High  
*Restrictive feature(s):* Fragipan at a depth of 21 to 38 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* About 21 to 36 inches (perched)

*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Low (about 5.1 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 3e  
*Hydric soil status:* No  
*Hydrologic soil group:* C

**Typical Profile**

0 to 8 inches; channery silt loam  
8 to 27 inches; channery silt loam  
27 to 60 inches; channery silt loam  
60 to 64 inches; very channery loam

**Minor Components**

**Lackawanna**

*Percent of map unit:* 5 percent  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 8 to 15 percent  
*Hydric soil status:* No

**Mardin**

*Percent of map unit:* 5 percent  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 8 to 15 percent  
*Hydric soil status:* No

**296274—Bath channery silt loam, 15 to 25 percent slopes**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 800 to 1,800 feet  
*Mean annual precipitation:* 30 to 50 inches  
*Mean annual air temperature:* 45 to 50 degrees F  
*Frost-free period:* 110 to 165 days

**Map Unit Composition**

Bath and similar soils: 85 percent  
Dissimilar minor components: 10 percent

**Description of Bath Soil**

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

**Setting**

*Landform:* Glaciated mountains  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Upper third of mountain flank, side slope  
*Slope:* 15 to 25 percent  
*Down-slope shape:* Convex

*Across-slope shape*: Convex  
*Aspect (representative)*: Southeast  
*Aspect (range)*: All aspects  
*Soil temperature regime*: Mesic

**Properties and Qualities**

*Runoff*: Very high  
*Restrictive feature(s)*: Fragipan at a depth of 21 to 38 inches  
*Frequency of flooding*: None  
*Frequency of ponding*: None  
*Depth to water table*: About 21 to 36 inches (perched)  
*Drainage class*: Well drained  
*Shrink-swell potential*: Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage)*: 0  
*Available water capacity*: Low (about 5.1 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated)*: 4e  
*Hydric soil status*: No  
*Hydrologic soil group*: C

**Typical Profile**

0 to 8 inches; channery silt loam  
8 to 27 inches; channery silt loam  
27 to 60 inches; channery silt loam  
60 to 64 inches; very channery loam

***Minor Components***

**Lackawanna**

*Percent of map unit*: 5 percent  
*Aspect (representative)*: Southeast  
*Aspect (range)*: All aspects  
*Slope*: 15 to 25 percent  
*Hydric soil status*: No

**Mardin**

*Percent of map unit*: 5 percent  
*Aspect (representative)*: Southeast  
*Aspect (range)*: All aspects  
*Slope*: 15 to 25 percent  
*Hydric soil status*: No

**296275—Bath very stony silt loam, 0 to 8 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA)*: 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation*: 800 to 1,800 feet  
*Mean annual precipitation*: 30 to 40 inches  
*Mean annual air temperature*: 45 to 50 degrees F  
*Frost-free period*: 110 to 140 days

***Map Unit Composition***

Bath and similar soils: 90 percent



### ***Description of Bath Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landform*: Glaciated mountains

*Landform position (two-dimensional)*: Summit

*Landform position (three-dimensional)*: Upper third of mountain flank, side slope

*Slope*: 3 to 8 percent

*Down-slope shape*: Convex

*Across-slope shape*: Convex

*Aspect (representative)*: Southeast

*Aspect (range)*: All aspects

*Soil temperature regime*: Mesic

#### **Properties and Qualities**

*Runoff*: High

*Parent material*: Loamy till derived mainly from gray and brown siltstone, sandstone, and shale

*Restrictive feature(s)*: Fragipan at a depth of 21 to 38 inches

*Frequency of flooding*: None

*Frequency of ponding*: None

*Depth to water table*: About 21 to 36 inches (perched)

*Drainage class*: Well drained

*Shrink-swell potential*: Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage)*: 0

*Available water capacity*: Low (about 5.4 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated)*: 6s

*Hydric soil status*: No

*Hydrologic soil group*: C

#### **Typical Profile**

0 to 8 inches; channery silt loam

8 to 27 inches; channery loam

27 to 60 inches; very channery loam

60 to 64 inches; flaggy loam

## **296276—Bath very stony silt loam, 8 to 25 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA)*: 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation*: 800 to 1,800 feet

*Mean annual precipitation*: 30 to 40 inches

*Mean annual air temperature*: 45 to 50 degrees F

*Frost-free period*: 110 to 140 days

### ***Map Unit Composition***

Bath and similar soils: 90 percent

### ***Description of Bath Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

**Setting**

*Landform:* Glaciated mountains

*Landform position (two-dimensional):* Summit

*Landform position (three-dimensional):* Upper third of mountain flank, side slope

*Slope:* 8 to 25 percent

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* High

*Parent material:* Loamy till derived mainly from gray and brown siltstone, sandstone, and shale

*Restrictive feature(s):* Fragipan at a depth of 21 to 38 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 21 to 36 inches (perched)

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 5.4 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 6s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

0 to 8 inches; channery silt loam

8 to 27 inches; channery loam

27 to 60 inches; very channery loam

60 to 64 inches; flaggy loam

**296277—Benson-Rock outcrop complex, 0 to 8 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 85 to 1,000 feet

*Mean annual precipitation:* 28 to 45 inches

*Mean annual air temperature:* 45 to 55 degrees F

*Frost-free period:* 120 to 180 days

***Map Unit Composition***

Benson and similar soils: 55 percent

Rock outcrop: 15 percent

***Description of Benson Soil***

**Soil Classification**

Loamy-skeletal, mixed, active, mesic Lithic Eutrudepts

**Setting**

*Landscape:* Glaciated uplands

*Landform:* Hillslopes

*Landform position (two-dimensional):* Summit, backslope

*Landform position (three-dimensional):* Interfluvium, side slope

*Slope:* 0 to 8 percent

*Down-slope shape:* Convex, linear

*Across-slope shape:* Linear, convex

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Low

*Parent material:* Loamy till

*Restrictive feature(s):* Lithic bedrock at a depth of 12 to 20 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 2.5 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 6s

*Hydric soil status:* No

*Hydrologic soil group:* D

#### **Typical Profile**

0 to 8 inches; channery silt loam

8 to 18 inches; very channery silt loam

18 to 22 inches; unweathered bedrock

## **296278—Benson-Rock outcrop complex, 8 to 25 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 85 to 1,000 feet

*Mean annual precipitation:* 28 to 51 inches

*Mean annual air temperature:* 40 to 55 degrees F

*Frost-free period:* 100 to 180 days

### ***Map Unit Composition***

Benson and similar soils: 60 percent

Rock outcrop: 20 percent

### ***Description of Benson Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, active, mesic Lithic Eutrudepts

#### **Setting**

*Landscape:* Glaciated uplands

*Landform:* Hillslopes

*Landform position (two-dimensional):* Summit, backslope

*Landform position (three-dimensional):* Side slope, interfluvial

*Slope:* 8 to 25 percent

*Down-slope shape:* Convex, linear

*Across-slope shape:* Linear, convex

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Medium

*Parent material:* Loamy till

*Restrictive feature(s):* Lithic bedrock at a depth of 12 to 20 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 2.5 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 6s

*Hydric soil status:* No

*Hydrologic soil group:* D

#### **Typical Profile**

0 to 8 inches; channery silt loam

8 to 18 inches; very channery silt loam

### ***Description of Rock Outcrop***

#### **Setting**

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

#### **Properties and Qualities**

*Restrictive feature(s):* Lithic bedrock at the surface

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Calcium carbonate equivalent (maximum weight percentage):* 0

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 6s

*Hydric soil status:* No

*Hydrologic soil group:* D

## **296279—Benson-Rock outcrop complex, 25 to 70 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 85 to 1,000 feet

*Mean annual precipitation:* 28 to 51 inches

*Mean annual air temperature:* 40 to 55 degrees F

*Frost-free period:* 100 to 180 days

### ***Map Unit Composition***

Benson and similar soils: 60 percent

Rock outcrop: 25 percent

### ***Description of Benson Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, active, mesic Lithic Eutrudepts

#### **Setting**

*Landscape:* Glaciated uplands

*Landform:* Hillslopes

*Landform position (two-dimensional):* Summit, backslope

*Landform position (three-dimensional):* Side slope, interfluve

*Slope:* 25 to 70 percent

*Down-slope shape:* Convex, linear

*Across-slope shape:* Linear, convex

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* High

*Parent material:* Loamy till

*Restrictive feature(s):* Lithic bedrock at a depth of 12 to 20 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 2.5 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* D

#### **Typical Profile**

0 to 8 inches; channery silt loam

8 to 18 inches; very channery silt loam

18 to 22 inches; unweathered bedrock

### ***Description of Rock Outcrop***

#### **Setting**

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

#### **Properties and Qualities**

*Restrictive feature(s):* Lithic bedrock at the surface

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Calcium carbonate equivalent (maximum weight percentage):* 0



**Interpretive Groups**

*Land capability classification (nonirrigated): 7s*

*Hydric soil status: No*

*Hydrologic soil group: D*

**296280—Braceville gravelly loam, 0 to 3 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA): 140—Glaciated Allegheny Plateau and Catskill Mountains*

*Mean annual precipitation: 36 to 56 inches*

*Mean annual air temperature: 46 to 54 degrees F*

*Frost-free period: 145 to 175 days*

***Map Unit Composition***

Braceville and similar soils: 90 percent

Dissimilar minor components: 10 percent

***Description of Braceville Soil***

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

**Setting**

*Landform: Outwash terraces*

*Landform position (two-dimensional): Toeslope*

*Landform position (three-dimensional): Tread*

*Slope: 0 to 3 percent*

*Down-slope shape: Linear, convex*

*Across-slope shape: Linear, concave*

*Aspect (representative): Southeast*

*Aspect (range): All aspects*

*Soil temperature regime: Mesic*

**Properties and Qualities**

*Runoff: Low*

*Parent material: Coarse-loamy outwash*

*Restrictive feature(s): Fragipan at a depth of 18 to 30 inches*

*Frequency of flooding: None*

*Frequency of ponding: None*

*Depth to water table: About 18 to 36 inches (perched)*

*Drainage class: Moderately well drained*

*Shrink-swell potential: Low (about 1.5 percent linear extensibility)*

*Calcium carbonate equivalent (maximum weight percentage): 0*

*Available water capacity: Low (about 5.2 inches)*

**Interpretive Groups**

*Land capability classification (nonirrigated): 2w*

*Hydric soil status: No*

*Hydrologic soil group: C*

**Typical Profile**

0 to 3 inches; gravelly loam

3 to 30 inches; gravelly silt loam

30 to 55 inches; very gravelly loam

55 to 60 inches; stratified sand and gravel

### ***Minor Components***

#### **Rexford, poorly drained**

*Percent of map unit:* 10 percent

*Landform:* Depressions

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Hydric soil status:* Yes

## **296281—Braceville gravelly loam, 3 to 8 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Mean annual precipitation:* 34 to 56 inches

*Mean annual air temperature:* 40 to 54 degrees F

*Frost-free period:* 100 to 175 days

### ***Map Unit Composition***

Braceville and similar soils: 90 percent

Dissimilar minor components: 5 percent

### ***Description of Braceville Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landform:* Outwash terraces

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Tread

*Slope:* 3 to 8 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Medium

*Parent material:* Coarse-loamy outwash

*Restrictive feature(s):* Fragipan at a depth of 18 to 30 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 18 to 36 inches (perched)

*Drainage class:* Moderately well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 5.2 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 2w

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

0 to 3 inches; gravelly loam  
3 to 30 inches; gravelly silt loam  
30 to 55 inches; very gravelly loam  
55 to 60 inches; stratified sand and gravel

***Minor Components***

**Rexford, poorly drained**

*Percent of map unit:* 5 percent  
*Landform:* Depressions  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil status:* Yes

**296283—Buchanan extremely stony loam, 0 to 8 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 600 to 2,400 feet  
*Mean annual precipitation:* 34 to 51 inches  
*Mean annual air temperature:* 40 to 57 degrees F  
*Frost-free period:* 100 to 170 days

***Map Unit Composition***

Buchanan and similar soils: 90 percent  
Dissimilar minor components: 5 percent

***Description of Buchanan Soil***

**Soil Classification**

Fine-loamy, mixed, semiactive, mesic Aquic Fragiudults

**Setting**

*Landform:* Valley sides, mountain slopes  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Lower third of mountain flank, base slope  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Concave, linear  
*Across-slope shape:* Linear, concave  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* High  
*Parent material:* Mountain slope colluvium derived from sedimentary rock  
*Restrictive feature(s):* Fragipan at a depth of 20 to 36 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None

*Depth to water table:* About 18 to 36 inches (perched)  
*Drainage class:* Moderately well drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Moderate (about 6.1 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s  
*Hydric soil status:* No  
*Hydrologic soil group:* C

**Typical Profile**

0 to 4 inches; channery loam  
4 to 25 inches; gravelly loam  
25 to 60 inches; gravelly loam

***Minor Components***

**Shelmadine**

*Percent of map unit:* 5 percent  
*Landform:* Depressions  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil status:* Yes

**296288—Chippewa and Norwich silt loams, 0 to 5 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 500 to 1,000 feet  
*Mean annual precipitation:* 30 to 45 inches  
*Mean annual air temperature:* 45 to 50 degrees F  
*Frost-free period:* 110 to 180 days

***Map Unit Composition***

Chippewa and similar soils: 48 percent  
Norwich and similar soils: 48 percent

***Description of Chippewa Soil***

**Soil Classification**

Fine-loamy, mixed, active, mesic Typic Fragiaquepts

**Setting**

*Landform:* Depressions  
*Slope:* 0 to 5 percent  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* Very high

*Restrictive feature(s):* Fragipan at a depth of 10 to 24 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* At the surface to a depth of 2 inches (perched)

*Drainage class:* Poorly drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 3.9 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 4w

*Hydric soil status:* Yes

*Hydrologic soil group:* D

**Typical Profile**

Ap—0 to 8 inches; silt loam

Eg—8 to 16 inches; channery silt loam

Bxg—16 to 48 inches; gravelly silt loam

C—48 to 80 inches; very gravelly loam

***Description of Norwich Soil***

**Soil Classification**

Fine-loamy, mixed, active, mesic Typic Fragiaquepts

**Setting**

*Landform:* Depressions

*Slope:* 0 to 5 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* Very high

*Restrictive feature(s):* Fragipan at a depth of 10 to 24 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* At the surface to a depth of 2 inches (perched)

*Drainage class:* Poorly drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.2 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 4w

*Hydric soil status:* Yes

*Hydrologic soil group:* D

**Typical Profile**

Ap—0 to 8 inches; silt loam

Eg—8 to 16 inches; channery silt loam

Bxg—16 to 48 inches; channery silt loam

C—48 to 80 inches; channery silt loam

## **296289—Chippewa and Norwich extremely stony soils, 0 to 8 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 800 to 1,800 feet

*Mean annual precipitation:* 30 to 51 inches

*Mean annual air temperature:* 40 to 50 degrees F

*Frost-free period:* 100 to 160 days

### ***Map Unit Composition***

Chippewa and similar soils: 47 percent

Norwich and similar soils: 47 percent

### ***Description of Chippewa Soil***

#### **Soil Classification**

Fine-loamy, mixed, active, mesic Typic Fragiaquepts

#### **Setting**

*Landform:* Depressions

*Slope:* 0 to 8 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Very high

*Restrictive feature(s):* Fragipan at a depth of 10 to 24 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* At the surface to a depth of 2 inches (perched)

*Drainage class:* Poorly drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 3.6 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* Yes

*Hydrologic soil group:* D

#### **Typical Profile**

A—0 to 8 inches; channery silt loam

Eg—8 to 16 inches; channery silt loam

Bxg—16 to 48 inches; gravelly silt loam

C—48 to 80 inches; very gravelly loam



### ***Description of Norwich Soil***

#### **Soil Classification**

Fine-loamy, mixed, active, mesic Typic Fragiaquepts

#### **Setting**

*Landform:* Depressions

*Slope:* 0 to 8 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Very high

*Restrictive feature(s):* Fragipan at a depth of 10 to 24 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* At the surface to a depth of 2 inches (perched)

*Drainage class:* Poorly drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.0 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* Yes

*Hydrologic soil group:* D

#### **Typical Profile**

A—0 to 8 inches; channery silt loam

Eg—8 to 16 inches; channery silt loam

Bxg—16 to 48 inches; channery silt loam

C—48 to 80 inches; channery silt loam

## **296295—Cut and fill land**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Mean annual precipitation:* 34 to 51 inches

*Mean annual air temperature:* 40 to 50 degrees F

*Frost-free period:* 100 to 160 days

### ***Map Unit Composition***

Udorthents, cut and fill, and similar soils: 90 percent

### ***Description of Udorthents, Cut and Fill***

#### **Setting**

*Slope:* 0 to 25 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

**Properties and Qualities**

*Parent material:* Manmade and altered materials from mixed rock types

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 12 to 72 inches

*Calcium carbonate equivalent (maximum weight percentage):* 0

**Interpretive Groups**

*Hydric soil status:* No

*Hydrologic soil group:* B/D

**296297—Dekalb extremely stony loam, 8 to 25 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 1,000 to 2,795 feet

*Mean annual precipitation:* 36 to 60 inches

*Mean annual air temperature:* 46 to 59 degrees F

*Frost-free period:* 110 to 180 days

***Map Unit Composition***

Dekalb and similar soils: 100 percent

***Description of Dekalb Soil***

**Soil Classification**

Loamy-skeletal, mixed, siliceous, active, mesic Typic Dystrudepts

**Setting**

*Landform:* Mountains

*Landform position (two-dimensional):* Shoulder, backslope

*Landform position (three-dimensional):* Mountain flank

*Slope:* 8 to 25 percent

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* Medium

*Parent material:* Residuum weathered from sandstone and shale

*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 40 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 2.9 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No  
*Hydrologic soil group:* C

**Typical Profile**

0 to 7 inches; very channery loam  
7 to 24 inches; very channery sandy loam  
24 to 32 inches; very channery sandy loam  
32 to 36 inches; unweathered bedrock

**296298—Dekalb extremely stony loam, 25 to 80 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 1,000 to 2,795 feet  
*Mean annual precipitation:* 36 to 60 inches  
*Mean annual air temperature:* 46 to 59 degrees F  
*Frost-free period:* 110 to 180 days

***Map Unit Composition***

Dekalb and similar soils: 100 percent

***Description of Dekalb Soil***

**Soil Classification**

Loamy-skeletal, mixed, siliceous, active, mesic Typic Dystrudepts

**Setting**

*Landform:* Mountains  
*Landform position (two-dimensional):* Shoulder, backslope  
*Landform position (three-dimensional):* Mountain flank  
*Slope:* 25 to 80 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* High  
*Parent material:* Residuum weathered from sandstone and shale  
*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 40 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Very low (about 2.9 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s  
*Hydric soil status:* No  
*Hydrologic soil group:* C

**Typical Profile**

0 to 7 inches; very channery loam

7 to 24 inches; very channery sandy loam

24 to 32 inches; very channery sandy loam

32 to 36 inches; unweathered bedrock

**296303—Hazleton extremely stony sandy loam, 8 to 25 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 1,095 to 2,495 feet

*Mean annual precipitation:* 36 to 55 inches

*Mean annual air temperature:* 46 to 55 degrees F

*Frost-free period:* 110 to 180 days

***Map Unit Composition***

Hazleton and similar soils: 100 percent

***Description of Hazleton Soil***

**Soil Classification**

Loamy-skeletal, siliceous, active, mesic Typic Dystrudepts

**Setting**

*Landscape:* Mountains

*Landform:* Gray and red sandstone mountain slopes

*Landform position (two-dimensional):* Shoulder, backslope

*Landform position (three-dimensional):* Upper third of mountain flank

*Slope:* 8 to 25 percent

*Down-slope shape:* Convex, linear

*Across-slope shape:* Linear, convex

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* Low

*Parent material:* Residuum weathered from sandstone

*Restrictive feature(s):* Lithic bedrock at a depth of 40 to 96 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 5.7 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* B

**Typical Profile**

0 to 5 inches; very channery sandy loam

5 to 31 inches; channery sandy loam  
31 to 58 inches; very channery coarse sandy loam  
58 to 69 inches; unweathered bedrock

## **296304—Holly silt loam**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 800 to 835 feet

*Mean annual precipitation:* 30 to 40 inches

*Mean annual air temperature:* 48 to 54 degrees F

*Frost-free period:* 133 to 187 days

### ***Map Unit Composition***

Holly and similar soils: 100 percent

### ***Description of Holly Soil***

#### **Soil Classification**

Fine-loamy, mixed, superactive, nonacid, mesic Typic Fluvaquents

#### **Setting**

*Landform:* Depressions on flood plains, backswamps

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Base slope

*Slope:* 0 to 3 percent

*Down-slope shape:* Concave

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Very high

*Parent material:* Loamy alluvium derived from sandstone and shale

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* Frequent

*Frequency of ponding:* None

*Depth to water table:* At the surface to a depth of 6 inches

*Drainage class:* Poorly drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* High (about 10.0 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 3w

*Hydric soil status:* Yes

*Hydrologic soil group:* D

#### **Typical Profile**

0 to 8 inches; silt loam

8 to 28 inches; very fine sandy loam

28 to 41 inches; loam

41 to 60 inches; stratified gravelly sand to silt loam

## **296311—Lackawanna and Bath extremely stony soils, steep**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 600 to 1,800 feet

*Mean annual precipitation:* 30 to 50 inches

*Mean annual air temperature:* 45 to 52 degrees F

*Frost-free period:* 110 to 180 days

### ***Map Unit Composition***

Lackawanna and similar soils: 40 percent

Bath and similar soils: 30 percent

Dissimilar minor components: 20 percent

### ***Description of Lackawanna Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landform:* Ridges, glaciated hillslopes

*Landform position (two-dimensional):* Summit, backslope

*Landform position (three-dimensional):* Mountaintop, side slope

*Slope:* 25 to 70 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Very high

*Restrictive feature(s):* Fragipan at a depth of 21 to 36 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 21 to 35 inches (perched)

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 6.4 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

#### **Typical Profile**

A—0 to 8 inches; channery loam

Bw—8 to 25 inches; channery loam

Bx—25 to 60 inches; channery silt loam

### ***Description of Bath Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts



**Setting**

*Landform:* Glaciated mountains

*Landform position (two-dimensional):* Summit

*Landform position (three-dimensional):* Upper third of mountain flank, side slope

*Slope:* 25 to 70 percent

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* Very high

*Restrictive feature(s):* Fragipan at a depth of 21 to 38 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 21 to 36 inches (perched)

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 5.4 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

0 to 8 inches; channery silt loam

8 to 27 inches; channery silt loam

27 to 60 inches; channery silt loam

60 to 64 inches; very channery loam

**Minor Components****Lordstown**

*Percent of map unit:* 5 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 8 to 25 percent

*Hydric soil status:* No

**Mardin**

*Percent of map unit:* 5 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 8 to 25 percent

*Hydric soil status:* No

**Oquaga**

*Percent of map unit:* 5 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 15 to 25 percent

*Hydric soil status:* No

**Wellsboro**

*Percent of map unit:* 5 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 15 to 25 percent

*Hydric soil status:* No

## **296312—Lackawanna channery loam, 2 to 8 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 800 to 1,800 feet

*Mean annual precipitation:* 30 to 50 inches

*Mean annual air temperature:* 45 to 50 degrees F

*Frost-free period:* 110 to 165 days

### ***Map Unit Composition***

Lackawanna and similar soils: 80 percent

Dissimilar minor components: 10 percent

### ***Description of Lackawanna Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landform:* Ridges, glaciated hillslopes

*Landform position (two-dimensional):* Summit, backslope

*Landform position (three-dimensional):* Mountaintop, side slope

*Slope:* 3 to 8 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* High

*Restrictive feature(s):* Fragipan at a depth of 17 to 36 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 21 to 35 inches (perched)

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 6.4 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 2e

*Hydric soil status:* No

*Hydrologic soil group:* C

#### **Typical Profile**

A—0 to 8 inches; channery loam

Bw—8 to 25 inches; channery loam

Bx—25 to 60 inches; channery silt loam

### ***Minor Components***

#### **Bath**

*Percent of map unit:* 5 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Hydric soil status:* No

#### **Wellsboro**

*Percent of map unit:* 5 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Hydric soil status:* No

## **296313—Lackawanna channery loam, 8 to 15 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 800 to 1,800 feet

*Mean annual precipitation:* 30 to 50 inches

*Mean annual air temperature:* 45 to 50 degrees F

*Frost-free period:* 110 to 165 days

### ***Map Unit Composition***

Lackawanna and similar soils: 80 percent

Dissimilar minor components: 10 percent

### ***Description of Lackawanna Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landform:* Ridges, glaciated hillslopes

*Landform position (two-dimensional):* Summit, backslope

*Landform position (three-dimensional):* Mountaintop, side slope

*Slope:* 8 to 15 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* High

*Restrictive feature(s):* Fragipan at a depth of 17 to 36 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 21 to 35 inches (perched)

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 6.4 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 3e

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

A—0 to 8 inches; channery loam

Bw—8 to 25 inches; channery loam

Bx—25 to 60 inches; channery silt loam

***Minor Components***

**Bath**

*Percent of map unit:* 5 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 8 to 15 percent

*Hydric soil status:* No

**Lackawanna**

*Percent of map unit:* 5 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Hydric soil status:* No

**296315—Lackawanna extremely stony loam, 0 to 8 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 800 to 1,800 feet

*Mean annual precipitation:* 30 to 50 inches

*Mean annual air temperature:* 45 to 50 degrees F

*Frost-free period:* 110 to 165 days

***Map Unit Composition***

Lackawanna and similar soils: 80 percent

Dissimilar minor components: 10 percent

***Description of Lackawanna Soil***

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

**Setting**

*Landform:* Ridges, glaciated hillslopes

*Landform position (two-dimensional):* Summit, backslope

*Landform position (three-dimensional):* Mountaintop, side slope

*Slope:* 3 to 8 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

### **Properties and Qualities**

*Runoff:* High

*Restrictive feature(s):* Fragipan at a depth of 21 to 36 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 21 to 35 inches (perched)

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 6.4 inches)

### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

### **Typical Profile**

A—0 to 8 inches; channery loam

Bw—8 to 25 inches; channery loam

Bx—25 to 60 inches; channery silt loam

### **Minor Components**

#### **Bath**

*Percent of map unit:* 5 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Hydric soil status:* No

#### **Wellsboro**

*Percent of map unit:* 5 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Hydric soil status:* No

## **296316—Lackawanna extremely stony loam, 8 to 25 percent slopes**

### **Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 800 to 1,800 feet

*Mean annual precipitation:* 30 to 50 inches

*Mean annual air temperature:* 45 to 50 degrees F

*Frost-free period:* 110 to 165 days

### **Map Unit Composition**

Lackawanna and similar soils: 80 percent

Dissimilar minor components: 10 percent

### **Description of Lackawanna Soil**

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

**Setting**

*Landform:* Ridges, glaciated hillslopes

*Landform position (two-dimensional):* Summit, backslope

*Landform position (three-dimensional):* Mountaintop, side slope

*Slope:* 8 to 25 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* High

*Restrictive feature(s):* Fragipan at a depth of 21 to 36 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 21 to 35 inches (perched)

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 6.4 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

A—0 to 8 inches; channery loam

Bw—8 to 25 inches; channery loam

Bx—25 to 60 inches; channery silt loam

**Minor Components**

**Bath**

*Percent of map unit:* 5 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 8 to 25 percent

*Hydric soil status:* No

**Wellsboro**

*Percent of map unit:* 5 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 8 to 25 percent

*Hydric soil status:* No

**296317—Laidig extremely stony loam, 0 to 8 percent slopes**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 3,795 feet

*Mean annual precipitation:* 34 to 40 inches



*Mean annual air temperature:* 50 to 57 degrees F

*Frost-free period:* 120 to 175 days

### ***Map Unit Composition***

Laidig and similar soils: 100 percent

### ***Description of Laidig Soil***

#### **Soil Classification**

Fine-loamy, siliceous, active, mesic Typic Fragiudults

#### **Setting**

*Landform:* Mountains

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Lower third of mountain flank

*Slope:* 0 to 8 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Low

*Parent material:* Colluvium derived from sandstone and siltstone

*Restrictive feature(s):* Fragipan at a depth of 30 to 50 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 30 to 48 inches (perched)

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 5.9 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

#### **Typical Profile**

0 to 6 inches; very gravelly loam

6 to 33 inches; gravelly loam

33 to 65 inches; very gravelly loam

## **296326—Lordstown extremely stony silt loam, 0 to 8 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 695 to 1,800 feet

*Mean annual precipitation:* 30 to 50 inches

*Mean annual air temperature:* 45 to 52 degrees F

*Frost-free period:* 110 to 180 days

### ***Map Unit Composition***

Lordstown and similar soils: 85 percent  
Dissimilar minor components: 15 percent

### ***Description of Lordstown Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Dystrudepts

#### **Setting**

*Landform:* Hills

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Crest, side slope

*Slope:* 3 to 8 percent

*Down-slope shape:* Linear, convex

*Across-slope shape:* Linear, convex

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Medium

*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 40 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.0 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

#### **Typical Profile**

A—0 to 7 inches; channery silt loam

Bw—7 to 26 inches; channery silt loam

C—26 to 30 inches; very channery silt loam

2R—30 to 42 inches; unweathered bedrock

### ***Minor Components***

#### **Arnot**

*Percent of map unit:* 5 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 15 percent

*Hydric soil status:* No

#### **Bath**

*Percent of map unit:* 5 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Hydric soil status:* No

**Oquaga**

*Percent of map unit:* 5 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Hydric soil status:* No

**296327—Lordstown extremely stony silt loam, 8 to 25 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 695 to 1,800 feet

*Mean annual precipitation:* 30 to 50 inches

*Mean annual air temperature:* 45 to 52 degrees F

*Frost-free period:* 110 to 180 days

***Map Unit Composition***

Lordstown and similar soils: 85 percent

Dissimilar minor components: 15 percent

***Description of Lordstown Soil***

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Dystrudepts

**Setting**

*Landform:* Hills

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Crest, side slope

*Slope:* 8 to 25 percent

*Down-slope shape:* Linear, convex

*Across-slope shape:* Linear, convex

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* Medium

*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 40 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.0 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

A—0 to 7 inches; channery silt loam

Bw—7 to 26 inches; channery silt loam

C—26 to 30 inches; very channery silt loam

2R—30 to 42 inches; unweathered bedrock

### ***Minor Components***

#### **Arnot**

*Percent of map unit:* 5 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 15 percent

*Hydric soil status:* No

#### **Bath**

*Percent of map unit:* 5 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 8 to 25 percent

*Hydric soil status:* No

#### **Oquaga**

*Percent of map unit:* 5 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 8 to 25 percent

*Hydric soil status:* No

## **296328—Lordstown and Oquaga extremely stony soils, 25 to 70 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 695 to 1,800 feet

*Mean annual precipitation:* 32 to 50 inches

*Mean annual air temperature:* 45 to 52 degrees F

*Frost-free period:* 110 to 180 days

### ***Map Unit Composition***

Lordstown and similar soils: 40 percent

Oquaga and similar soils: 35 percent

### ***Description of Lordstown Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Dystrudepts

#### **Setting**

*Landform:* Hills

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Crest, side slope

*Slope:* 25 to 70 percent

*Down-slope shape:* Linear, convex

*Across-slope shape:* Linear, convex

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* High

*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 40 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 3.8 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

A—0 to 7 inches; very channery silt loam

Bw—7 to 26 inches; very channery loam

C—26 to 30 inches; very channery silt loam

2R—30 to 42 inches; unweathered bedrock

***Description of Oquaga Soil***

**Soil Classification**

Loamy-skeletal, mixed, superactive, mesic Typic Dystrudepts

**Setting**

*Landscape:* Glaciated uplands

*Landform:* Hillslopes

*Landform position (two-dimensional):* Shoulder

*Landform position (three-dimensional):* Side slope

*Slope:* 25 to 60 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* High

*Parent material:* Reddish ablation till derived from sandstone and siltstone

*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 40 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 2.7 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

A—0 to 7 inches; very channery loam

Bw—7 to 30 inches; very channery loam

R—30 to 42 inches; unweathered bedrock

## **296329—Mardin channery silt loam, 2 to 8 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 800 to 1,800 feet

*Mean annual precipitation:* 30 to 45 inches

*Mean annual air temperature:* 45 to 50 degrees F

*Frost-free period:* 110 to 150 days

### ***Map Unit Composition***

Mardin and similar soils: 85 percent

Dissimilar minor components: 10 percent

### ***Description of Mardin Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landform:* Hills

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Slope:* 3 to 8 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* High

*Restrictive feature(s):* Fragipan at a depth of 14 to 26 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 11 to 22 inches (perched)

*Drainage class:* Moderately well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.1 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 2w

*Hydric soil status:* No

*Hydrologic soil group:* C

#### **Typical Profile**

A—0 to 8 inches; channery silt loam

Bw—8 to 17 inches; channery silt loam

BE—17 to 21 inches; channery silt loam

Bx—21 to 60 inches; channery loam

C—60 to 80 inches; channery loam

### ***Minor Components***

#### **Volusia**

*Percent of map unit:* 5 percent



*Landform:* Hills

*Geomorphic position (three-dimensional):* Side slope

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Down-slope shape:* Concave

*Across-slope shape:* Convex, concave

*Hydric soil status:* No

**Chippewa**

*Percent of map unit:* 3 percent

*Landform:* Depressions

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* Yes

**Bath**

*Percent of map unit:* 2 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Hydric soil status:* No

**296330—Mardin channery silt loam, 8 to 15 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 800 to 1,800 feet

*Mean annual precipitation:* 30 to 45 inches

*Mean annual air temperature:* 45 to 50 degrees F

*Frost-free period:* 110 to 150 days

***Map Unit Composition***

Mardin and similar soils: 85 percent

Dissimilar minor components: 10 percent

***Description of Mardin Soil***

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

**Setting**

*Landform:* Hills

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Slope:* 8 to 15 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* High

*Parent material:* Loamy till

*Restrictive feature(s):* Fragipan at a depth of 14 to 26 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 11 to 22 inches (perched)

*Drainage class:* Moderately well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.1 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 3e

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

A—0 to 8 inches; channery silt loam

Bw—8 to 17 inches; channery silt loam

BE—17 to 21 inches; channery silt loam

Bx—21 to 60 inches; channery loam

C—60 to 80 inches; channery loam

**Minor Components**

**Volusia**

*Percent of map unit:* 5 percent

*Landform:* Hills

*Geomorphic position (three-dimensional):* Side slope

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 8 to 18 percent

*Down-slope shape:* Concave

*Across-slope shape:* Convex, concave

*Hydric soil status:* No

**Bath**

*Percent of map unit:* 3 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 8 to 15 percent

*Hydric soil status:* No

**Chippewa**

*Percent of map unit:* 2 percent

*Landform:* Depressions

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* Yes

## **296331—Mardin very stony silt loam, 0 to 8 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 750 to 1,800 feet

*Mean annual precipitation:* 30 to 50 inches

*Mean annual air temperature:* 45 to 50 degrees F

*Frost-free period:* 110 to 160 days

### ***Map Unit Composition***

Mardin and similar soils: 85 percent

Dissimilar minor components: 15 percent

### ***Description of Mardin Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landform:* Hills

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Slope:* 3 to 8 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Very high

*Parent material:* Loamy till

*Restrictive feature(s):* Fragipan at a depth of 14 to 26 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 11 to 22 inches (perched)

*Drainage class:* Moderately well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 3.9 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 6s

*Hydric soil status:* No

*Hydrologic soil group:* C

#### **Typical Profile**

A—0 to 8 inches; very stony silt loam

Bw—8 to 17 inches; channery silt loam

BE—17 to 21 inches; channery silt loam

Bx—21 to 60 inches; channery silt loam

C—60 to 80 inches; very channery silt loam

### ***Minor Components***

#### **Lordstown**

*Percent of map unit:* 6 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Hydric soil status:* No

**Volusia**

*Percent of map unit:* 5 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Hydric soil status:* No

**Chippewa**

*Percent of map unit:* 4 percent

*Landform:* Depressions

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* Yes

**296332—Mardin very stony silt loam, 8 to 25 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 750 to 1,800 feet

*Mean annual precipitation:* 30 to 50 inches

*Mean annual air temperature:* 45 to 50 degrees F

*Frost-free period:* 110 to 160 days

***Map Unit Composition***

Mardin and similar soils: 87 percent

Dissimilar minor components: 12 percent

***Description of Mardin Soil***

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

**Setting**

*Landform:* Hills

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Slope:* 8 to 25 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* Very high

*Parent material:* Loamy till

*Restrictive feature(s)*: Fragipan at a depth of 14 to 26 inches  
*Frequency of flooding*: None  
*Frequency of ponding*: None  
*Depth to water table*: About 11 to 22 inches (perched)  
*Drainage class*: Moderately well drained  
*Shrink-swell potential*: Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage)*: 0  
*Available water capacity*: Low (about 3.9 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated)*: 6s  
*Hydric soil status*: No  
*Hydrologic soil group*: C

**Typical Profile**

A—0 to 8 inches; very stony silt loam  
Bw—8 to 17 inches; channery silt loam  
BE—17 to 21 inches; channery silt loam  
Bx—21 to 60 inches; channery silt loam  
C—60 to 80 inches; very channery silt loam

**Minor Components**

**Lordstown**

*Percent of map unit*: 8 percent  
*Aspect (representative)*: Southeast  
*Aspect (range)*: All aspects  
*Slope*: 15 to 25 percent  
*Hydric soil status*: No

**Volusia**

*Percent of map unit*: 3 percent  
*Aspect (representative)*: Southeast  
*Aspect (range)*: All aspects  
*Slope*: 8 to 25 percent  
*Hydric soil status*: No

**Chippewa**

*Percent of map unit*: 1 percent  
*Landform*: Depressions  
*Aspect (representative)*: Southeast  
*Aspect (range)*: All aspects  
*Slope*: 3 to 12 percent  
*Down-slope shape*: Concave  
*Across-slope shape*: Concave  
*Hydric soil status*: Yes

**296335—Meckesville gravelly loam, 8 to 15 percent slopes**

**Map Unit Setting**

*Major land resource area (MLRA)*: 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation*: 600 to 2,795 feet  
*Mean annual precipitation*: 34 to 48 inches

*Mean annual air temperature:* 46 to 55 degrees F

*Frost-free period:* 130 to 190 days

### ***Map Unit Composition***

Meckesville and similar soils: 100 percent

### ***Description of Meckesville Soil***

#### **Soil Classification**

Fine-loamy, mixed, active, mesic Typic Fragiudults

#### **Setting**

*Landform:* Mountain valleys

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Lower third of mountain flank

*Slope:* 8 to 15 percent

*Down-slope shape:* Concave

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Medium

*Parent material:* Sandstone, siltstone, and shale colluvium derived from sedimentary rock

*Restrictive feature(s):* Fragipan at a depth of 25 to 48 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 30 to 48 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 7.8 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 3e

*Hydric soil status:* No

*Hydrologic soil group:* C

#### **Typical Profile**

0 to 9 inches; gravelly loam

9 to 36 inches; channery loam

36 to 60 inches; channery loam

60 to 64 inches; very channery loam

## **296337—Meckesville very stony loam, 8 to 25 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 600 to 2,795 feet

*Mean annual precipitation:* 34 to 48 inches

*Mean annual air temperature:* 46 to 55 degrees F

*Frost-free period:* 130 to 190 days



### ***Map Unit Composition***

Meckesville and similar soils: 100 percent

### ***Description of Meckesville Soil***

#### **Soil Classification**

Fine-loamy, mixed, active, mesic Typic Fragiudults

#### **Setting**

*Landform:* Mountain valleys

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Lower third of mountain flank

*Slope:* 8 to 25 percent

*Down-slope shape:* Concave

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Medium

*Parent material:* Sandstone, siltstone, and shale colluvium derived from sedimentary rock

*Restrictive feature(s):* Fragipan at a depth of 25 to 48 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 30 to 48 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 7.3 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 6s

*Hydric soil status:* No

*Hydrologic soil group:* C

#### **Typical Profile**

0 to 9 inches; gravelly loam

9 to 36 inches; channery loam

36 to 60 inches; channery loam

60 to 64 inches; very channery loam

## **296338—Morris channery silt loam, 2 to 10 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 600 to 1,800 feet

*Mean annual precipitation:* 32 to 50 inches

*Mean annual air temperature:* 46 to 50 degrees F

*Frost-free period:* 120 to 165 days

### ***Map Unit Composition***

Morris and similar soils: 80 percent

Dissimilar minor components: 20 percent

### ***Description of Morris Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Aeric Fragiagquepts

#### **Setting**

*Landscape:* Glaciated uplands

*Landform:* Till plains

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Base slope

*Slope:* 3 to 8 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Very high

*Parent material:* Reddish ablation till derived from sandstone and siltstone

*Restrictive feature(s):* Fragipan at a depth of 11 to 22 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 3 to 10 inches (perched)

*Drainage class:* Somewhat poorly drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 6.0 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 3w

*Hydric soil status:* No

*Hydrologic soil group:* C

#### **Typical Profile**

A—0 to 8 inches; channery silt loam

Bw—8 to 17 inches; channery silt loam

Bx—17 to 70 inches; channery silt loam

C—70 to 80 inches; channery silt loam

### ***Minor Components***

#### **Norwich**

*Percent of map unit:* 20 percent

*Landform:* Depressions

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* Yes

## **296339—Morris extremely stony silt loam, 0 to 8 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 49.2 to 1,801 feet  
*Mean annual precipitation:* 32 to 50 inches  
*Mean annual air temperature:* 45 to 50 degrees F  
*Frost-free period:* 120 to 180 days

### **Map Unit Composition**

Morris and similar soils: 75 percent  
Dissimilar minor components: 25 percent

### **Description of Morris Soil**

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Aeric Fragiaquepts

#### **Setting**

*Landscape:* Glaciated uplands  
*Landform:* Till plains  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Base slope  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Very high  
*Parent material:* Reddish ablation till derived from sandstone and siltstone  
*Restrictive feature(s):* Fragipan at a depth of 11 to 22 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* About 3 to 10 inches (perched)  
*Drainage class:* Somewhat poorly drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Moderate (about 6.8 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s  
*Hydric soil status:* No  
*Hydrologic soil group:* C

#### **Typical Profile**

A—0 to 8 inches; very channery silt loam  
Bw—8 to 17 inches; very channery silt loam  
Bx—17 to 70 inches; gravelly loam  
C—70 to 80 inches; gravelly loam

### **Minor Components**

#### **Norwich**

*Percent of map unit:* 25 percent  
*Landform:* Depressions  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 0 to 5 percent  
*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* Yes

## **296340—Morris extremely stony silt loam, 8 to 20 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 600 to 1,800 feet

*Mean annual precipitation:* 32 to 50 inches

*Mean annual air temperature:* 46 to 50 degrees F

*Frost-free period:* 120 to 165 days

### ***Map Unit Composition***

Morris and similar soils: 80 percent

Dissimilar minor components: 20 percent

### ***Description of Morris Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Aeric Fragiaquepts

#### **Setting**

*Landscape:* Glaciated uplands

*Landform:* Till plains

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Base slope

*Slope:* 0 to 20 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Very high

*Parent material:* Reddish ablation till derived from sandstone and siltstone

*Restrictive feature(s):* Fragipan at a depth of 11 to 22 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 3 to 10 inches (perched)

*Drainage class:* Somewhat poorly drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 6.8 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

#### **Typical Profile**

A—0 to 8 inches; very channery silt loam

Bw—8 to 17 inches; very channery silt loam

Bx—17 to 70 inches; gravelly loam

C—70 to 80 inches; gravelly loam

### ***Minor Components***

#### **Norwich**

*Percent of map unit:* 20 percent

*Landform:* Depressions

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* Yes

## **296341—Mucky peat, deep**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Mean annual precipitation:* 34 to 51 inches

*Mean annual air temperature:* 40 to 50 degrees F

*Frost-free period:* 100 to 160 days

### ***Map Unit Composition***

Freetown, mucky peat, and similar soils: 100 percent

### ***Description of Freetown Mucky Peat***

#### **Soil Classification**

Dysic, mesic Typic Medisaprists

#### **Setting**

*Landform:* Swamps (fig. 2)

*Slope:* 0 to 2 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Negligible

*Parent material:* Highly decomposed organic material

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* Frequent

*Depth to water table:* At the surface to a depth of 6 inches

*Drainage class:* Very poorly drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very high (about 28.8 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 5w

*Hydric soil status:* Yes

*Hydrologic soil group:* D





Figure 2.—An area of Mucky peat, deep, behind the park headquarters.

**Typical Profile**

Oe—0 to 6 inches; mucky peat

Oa—6 to 72 inches; muck

**296342—Mucky peat, shallow**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 800 to 2,000 feet

*Mean annual precipitation:* 42 to 47 inches

*Mean annual air temperature:* 46 to 48 degrees F

*Frost-free period:* 110 to 150 days

### ***Map Unit Composition***

Paupack, mucky peat (shallow), and similar soils: 100 percent

### ***Description of Paupack Mucky Peat (Shallow)***

#### **Soil Classification**

Loamy-skeletal or clayey-skeletal, mixed, dysic, mesic Terric Medisaprist

#### **Setting**

*Landform:* Swamps

*Slope:* 0 to 2 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Negligible

*Parent material:* Woody organic material over gravelly alluvium

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* Frequent

*Depth to water table:* At the surface to a depth of 6 inches

*Drainage class:* Very poorly drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very high (about 18.8 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 5w

*Hydric soil status:* Yes

*Hydrologic soil group:* D

#### **Vegetation**

*Existing plants:* Silky dogwood, tamarack, rhododendron, and highbush blueberry

#### **Typical Profile**

Oe—0 to 3 inches; mucky peat

Oa1—3 to 26 inches; muck

Oa2—26 to 36 inches; very stony muck

Cg—36 to 70 inches; extremely stony sandy loam

## **296343—Oquaga-Lackawanna channery loams, 3 to 8 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 600 to 1,800 feet

*Mean annual precipitation:* 32 to 50 inches

*Mean annual air temperature:* 45 to 52 degrees F

*Frost-free period:* 110 to 180 days



### ***Map Unit Composition***

Oquaga and similar soils: 50 percent  
Lackawanna and similar soils: 35 percent

### ***Description of Oquaga Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, superactive, mesic Typic Dystrudepts

#### **Setting**

*Landscape:* Glaciated uplands  
*Landform:* Hillslopes  
*Landform position (two-dimensional):* Shoulder  
*Landform position (three-dimensional):* Side slope  
*Slope:* 3 to 8 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Medium  
*Parent material:* Reddish ablation till derived from sandstone and siltstone  
*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 40 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Very low (about 2.7 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 2e  
*Hydric soil status:* No  
*Hydrologic soil group:* C

#### **Typical Profile**

Ap—0 to 7 inches; very channery loam  
Bw—7 to 30 inches; very channery loam  
R—30 to 42 inches; unweathered bedrock

### ***Description of Lackawanna Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landform:* Ridges, glaciated hillslopes  
*Landform position (two-dimensional):* Summit, backslope  
*Landform position (three-dimensional):* Mountaintop, side slope  
*Slope:* 3 to 8 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* High

*Parent material:* Reddish ablation till derived from sandstone and siltstone

*Restrictive feature(s):* Fragipan at a depth of 21 to 36 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 21 to 35 inches (perched)

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 6.1 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 2e

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

A—0 to 8 inches; channery loam

Bw—8 to 25 inches; channery loam

Bx—25 to 60 inches; channery loam

**296344—Oquaga-Lackawanna channery loams, 8 to 15 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 600 to 1,800 feet

*Mean annual precipitation:* 32 to 50 inches

*Mean annual air temperature:* 45 to 52 degrees F

*Frost-free period:* 110 to 180 days

***Map Unit Composition***

Oquaga and similar soils: 55 percent

Lackawanna and similar soils: 30 percent

***Description of Oquaga Soil***

**Soil Classification**

Loamy-skeletal, mixed, superactive, mesic Typic Dystrudepts

**Setting**

*Landscape:* Glaciated uplands

*Landform:* Hillslopes

*Landform position (two-dimensional):* Shoulder

*Landform position (three-dimensional):* Side slope

*Slope:* 8 to 15 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* Medium

*Parent material:* Reddish ablation till derived from sandstone and siltstone  
*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 40 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Very low (about 2.7 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 3e  
*Hydric soil status:* No  
*Hydrologic soil group:* C

**Typical Profile**

Ap—0 to 7 inches; very channery loam  
Bw—7 to 30 inches; very channery loam  
R—30 to 42 inches; unweathered bedrock

**Description of Lackawanna Soil**

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

**Setting**

*Landform:* Ridges, glaciated hillslopes  
*Landform position (two-dimensional):* Summit, backslope  
*Landform position (three-dimensional):* Mountaintop, side slope  
*Slope:* 8 to 15 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* High  
*Parent material:* Reddish ablation till derived from sandstone and siltstone  
*Restrictive feature(s):* Fragipan at a depth of 21 to 36 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* About 21 to 35 inches (perched)  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Moderate (about 6.1 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 3e  
*Hydric soil status:* No  
*Hydrologic soil group:* C

**Typical Profile**

A—0 to 8 inches; channery loam  
Bw—8 to 25 inches; channery loam  
Bx—25 to 60 inches; channery loam

## **296346—Oquaga-Lackawanna extremely stony loams, 0 to 8 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 695 to 1,800 feet

*Mean annual precipitation:* 32 to 50 inches

*Mean annual air temperature:* 45 to 52 degrees F

*Frost-free period:* 110 to 180 days

### ***Map Unit Composition***

Oquaga and similar soils: 50 percent

Lackawanna and similar soils: 35 percent

### ***Description of Oquaga Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, superactive, mesic Typic Dystrudepts

#### **Setting**

*Landscape:* Glaciated uplands

*Landform:* Hillslopes

*Landform position (two-dimensional):* Shoulder

*Landform position (three-dimensional):* Side slope

*Slope:* 0 to 8 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Low

*Parent material:* Reddish ablation till derived from sandstone and siltstone

*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 40 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 2.7 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

#### **Typical Profile**

A—0 to 7 inches; very channery loam

Bw—7 to 30 inches; very channery loam

R—30 to 42 inches; unweathered bedrock

### ***Description of Lackawanna Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

**Setting**

*Landform:* Ridges, glaciated hillslopes

*Landform position (two-dimensional):* Summit, backslope

*Landform position (three-dimensional):* Mountaintop, side slope

*Slope:* 0 to 8 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* Medium

*Parent material:* Reddish ablation till derived from sandstone and siltstone

*Restrictive feature(s):* Fragipan at a depth of 21 to 36 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 21 to 35 inches (perched)

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 6.4 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

A—0 to 8 inches; very channery loam

Bw—8 to 25 inches; channery loam

Bx—25 to 60 inches; channery loam

**296347—Oquaga-Lackawanna extremely stony loams,  
8 to 25 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 695 to 1,800 feet

*Mean annual precipitation:* 32 to 50 inches

*Mean annual air temperature:* 45 to 52 degrees F

*Frost-free period:* 110 to 180 days

***Map Unit Composition***

Oquaga and similar soils: 60 percent

Lackawanna and similar soils: 30 percent

***Description of Oquaga Soil***

**Soil Classification**

Loamy-skeletal, mixed, superactive, mesic Typic Dystrudepts

**Setting**

*Landscape:* Glaciated uplands

*Landform:* Hillslopes

*Landform position (two-dimensional):* Shoulder  
*Landform position (three-dimensional):* Side slope  
*Slope:* 8 to 25 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* Medium  
*Parent material:* Reddish ablation till derived from sandstone and siltstone  
*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 40 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Very low (about 2.7 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s  
*Hydric soil status:* No  
*Hydrologic soil group:* C

**Typical Profile**

A—0 to 7 inches; very channery loam  
Bw—7 to 30 inches; very channery loam  
R—30 to 42 inches; unweathered bedrock

***Description of Lackawanna Soil***

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

**Setting**

*Landform:* Ridges, glaciated hillslopes  
*Landform position (two-dimensional):* Summit, backslope  
*Landform position (three-dimensional):* Mountaintop, side slope  
*Slope:* 8 to 25 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* High  
*Parent material:* Reddish ablation till derived from sandstone and siltstone  
*Restrictive feature(s):* Fragipan at a depth of 21 to 36 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* About 21 to 35 inches (perched)  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Moderate (about 6.4 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated): 7s*

*Hydric soil status: No*

*Hydrologic soil group: C*

**Typical Profile**

A—0 to 8 inches; very channery loam

Bw—8 to 25 inches; channery loam

Bx—25 to 60 inches; channery loam

**296348—Philo silt loam**

***Map Unit Setting***

*Major land resource area (MLRA): 140—Glaciated Allegheny Plateau and Catskill Mountains*

*Elevation: 600 to 2,995 feet*

*Mean annual precipitation: 30 to 55 inches*

*Mean annual air temperature: 46 to 59 degrees F*

*Frost-free period: 130 to 187 days*

***Map Unit Composition***

Philo and similar soils: 85 percent

Dissimilar minor components: 10 percent

***Description of Philo Soil***

**Soil Classification**

Coarse-loamy, mixed, active, mesic Fluvaquentic Dystrudepts

**Setting**

*Landform: Flood plains*

*Landform position (two-dimensional): Toeslope*

*Landform position (three-dimensional): Mountainbase*

*Slope: 0 to 3 percent*

*Down-slope shape: Linear*

*Across-slope shape: Linear*

*Aspect (representative): Southeast*

*Aspect (range): All aspects*

*Soil temperature regime: Mesic*

**Properties and Qualities**

*Runoff: Low*

*Parent material: Coarse-loamy alluvium derived from sandstone and siltstone*

*Restrictive feature(s): Lithic bedrock at a depth of 48 to 99 inches*

*Frequency of flooding: Frequent*

*Frequency of ponding: None*

*Depth to water table: About 18 to 36 inches*

*Drainage class: Moderately well drained*

*Shrink-swell potential: Low (about 1.5 percent linear extensibility)*

*Calcium carbonate equivalent (maximum weight percentage): 0*

*Available water capacity: Moderate (about 7.8 inches)*

**Interpretive Groups**

*Land capability classification (nonirrigated): 2w*

*Hydric soil status: No*

*Hydrologic soil group: B*



**Typical Profile**

0 to 10 inches; silt loam

10 to 40 inches; fine sandy loam

40 to 60 inches; gravelly fine sandy loam

**Minor Components**

**Holly**

*Percent of map unit:* 10 percent

*Landform:* Depressions on flood plains, backswamps

*Geomorphic position (two-dimensional):* Toeslope

*Geomorphic position (three-dimensional):* Base slope

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Down-slope shape:* Concave

*Across-slope shape:* Linear

*Hydric soil status:* Yes

**296349—Pope silt loam**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 800 to 835 feet

*Mean annual precipitation:* 30 to 51 inches

*Mean annual air temperature:* 40 to 54 degrees F

*Frost-free period:* 100 to 187 days

**Map Unit Composition**

Pope and similar soils: 90 percent

Dissimilar minor components: 8 percent

**Description of Pope Soil**

**Soil Classification**

Coarse-loamy, mixed, active, mesic Fluventic Dystrudepts

**Setting**

*Landform:* Flood plains

*Slope:* 0 to 3 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* Low

*Parent material:* Coarse-loamy alluvium derived from sandstone and siltstone

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* Occasional

*Frequency of ponding:* None

*Depth to water table:* About 48 to 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 8.9 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 1

*Hydric soil status:* No

*Hydrologic soil group:* B

**Typical Profile**

0 to 10 inches; silt loam

10 to 30 inches; silt loam

30 to 60 inches; loamy very fine sand

**Minor Components**

**Holly**

*Percent of map unit:* 8 percent

*Landform:* Depressions on flood plains, backswamps

*Geomorphic position (two-dimensional):* Toeslope

*Geomorphic position (three-dimensional):* Base slope

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Down-slope shape:* Concave

*Across-slope shape:* Linear

*Hydric soil status:* Yes

**296350—Pope silt loam, high bottom**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 800 to 835 feet

*Mean annual precipitation:* 30 to 51 inches

*Mean annual air temperature:* 40 to 54 degrees F

*Frost-free period:* 100 to 187 days

**Map Unit Composition**

Pope and similar soils: 90 percent

Dissimilar minor components: 10 percent

**Description of Pope Soil**

**Soil Classification**

Coarse-loamy, mixed, active, mesic Fluventic Dystrudepts

**Setting**

*Landform:* Flood plains

*Slope:* 0 to 3 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* Low

*Parent material:* Coarse-loamy alluvium derived from sandstone and siltstone

*Restrictive feature(s)*: None within a depth of 60 inches  
*Frequency of flooding*: Rare  
*Frequency of ponding*: None  
*Depth to water table*: About 48 to 72 inches  
*Drainage class*: Well drained  
*Shrink-swell potential*: Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage)*: 0  
*Available water capacity*: Moderate (about 8.9 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated)*: 1  
*Hydric soil status*: No  
*Hydrologic soil group*: B

**Typical Profile**

0 to 10 inches; silt loam  
10 to 30 inches; silt loam  
30 to 60 inches; loamy very fine sand

**Minor Components**

**Holly**

*Percent of map unit*: 10 percent  
*Landform*: Depressions on flood plains, backswamps  
*Geomorphic position (two-dimensional)*: Toeslope  
*Geomorphic position (three-dimensional)*: Base slope  
*Aspect (representative)*: Southeast  
*Aspect (range)*: All aspects  
*Slope*: 0 to 3 percent  
*Down-slope shape*: Concave  
*Across-slope shape*: Linear  
*Hydric soil status*: Yes

**296351—Rexford gravelly silt loam, 0 to 3 percent slopes**

**Map Unit Setting**

*Major land resource area (MLRA)*: 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Mean annual precipitation*: 34 to 51 inches  
*Mean annual air temperature*: 40 to 50 degrees F  
*Frost-free period*: 100 to 160 days

**Map Unit Composition**

Rexford, somewhat poorly drained, and similar soils: 40 percent  
Rexford, poorly drained, and similar soils: 35 percent

**Description of Rexford, Somewhat Poorly Drained, Soil**

**Soil Classification**

Coarse-loamy, mixed, active, mesic Aeric Fragiaquepts

**Setting**

*Slope*: 0 to 3 percent  
*Down-slope shape*: Concave  
*Across-slope shape*: Concave  
*Aspect (representative)*: Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* Very high

*Parent material:* Coarse-loamy outwash derived from sandstone and shale

*Restrictive feature(s):* Fragipan at a depth of 15 to 24 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 2 to 10 inches (perched)

*Drainage class:* Somewhat poorly drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.3 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 3w

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

Ap—0 to 8 inches; silt loam

Bw—8 to 18 inches; silt loam

Bx—18 to 40 inches; gravelly loam

2C—40 to 63 inches; stratified gravel and very gravelly loam

***Description of Rexford, Poorly Drained, Soil***

**Soil Classification**

Coarse-loamy, mixed, active, mesic Aeric Fragiaquepts

**Setting**

*Landform:* Depressions

*Slope:* 0 to 3 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* Negligible

*Parent material:* Coarse-loamy outwash derived from sandstone and shale

*Restrictive feature(s):* Fragipan at a depth of 15 to 24 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* At the surface (perched)

*Drainage class:* Poorly drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.3 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 3w

*Hydric soil status:* Yes

*Hydrologic soil group:* C

**Typical Profile**

Ap—0 to 8 inches; silt loam

Bw—8 to 18 inches; silt loam  
Bx—18 to 40 inches; gravelly loam  
2C—40 to 63 inches; stratified gravel and very gravelly loam

## **296355—Sheffield silt loam**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 925 to 1,085 feet

*Mean annual precipitation:* 34 to 44 inches

*Mean annual air temperature:* 46 to 54 degrees F

*Frost-free period:* 133 to 182 days

### ***Map Unit Composition***

Sheffield and similar soils: 100 percent

### ***Description of Sheffield Soil***

#### **Soil Classification**

Fine-silty, mixed, mesic Typic Fragiaqualfs

#### **Setting**

*Landform:* Depressions on till plains

*Landform position (two-dimensional):* Summit, footslope

*Landform position (three-dimensional):* Head slope, base slope, interfluvium

*Slope:* 0 to 3 percent

*Down-slope shape:* Concave

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Negligible

*Parent material:* Till

*Restrictive feature(s):* Fragipan at a depth of 15 to 26 inches; paralithic bedrock at a depth of 48 to 99 inches

*Frequency of flooding:* None

*Frequency of ponding:* Occasional

*Depth to water table:* At the surface

*Drainage class:* Poorly drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 8.3 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 3w

*Hydric soil status:* Yes

*Hydrologic soil group:* D

#### **Typical Profile**

0 to 7 inches; silt loam

7 to 19 inches; silty clay loam

19 to 38 inches; silty clay loam

38 to 66 inches; very channery silty clay loam

## **296363—Very stony land and Rock outcrops, steep**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 1,095 to 2,495 feet

*Mean annual precipitation:* 36 to 55 inches

*Mean annual air temperature:* 46 to 55 degrees F

*Frost-free period:* 100 to 160 days

### ***Map Unit Composition***

Dystrochrepts, very stony, and similar soils: 85 percent

### ***Description of Dystrochrepts, Very Stony***

#### **Soil Classification**

Typic Dystrochrepts

#### **Setting**

*Landform:* Mountain slopes

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Mountain flank

*Slope:* 25 to 99 percent

*Down-slope shape:* Linear, convex

*Across-slope shape:* Linear, convex

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Low

*Restrictive feature(s):* Lithic bedrock at a depth of 40 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.1 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* B

#### **Typical Profile**

0 to 6 inches; very channery loam

6 to 32 inches; very channery loam

32 to 56 inches; extremely channery loam

56 to 60 inches; unweathered bedrock

## **296369—Wayland silty clay loam**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 200 to 1,495 feet  
*Mean annual precipitation:* 30 to 40 inches  
*Mean annual air temperature:* 45 to 54 degrees F  
*Frost-free period:* 110 to 180 days

### ***Map Unit Composition***

Wayland and similar soils: 100 percent

### ***Description of Wayland Soil***

#### **Soil Classification**

Fine-silty, mixed, active, nonacid, mesic Mollic Fluvaquents

#### **Setting**

*Landform:* Flood plains  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Talf  
*Slope:* 0 to 3 percent  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Negligible  
*Parent material:* Recent alluvium  
*Restrictive feature(s):* None within a depth of 60 inches  
*Frequency of flooding:* Frequent  
*Frequency of ponding:* Frequent  
*Depth to water table:* At the surface  
*Drainage class:* Very poorly drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* High (about 10.2 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 4w  
*Hydric soil status:* Yes  
*Hydrologic soil group:* C/D

#### **Typical Profile**

0 to 9 inches; silty clay loam  
9 to 41 inches; silty clay loam  
41 to 60 inches; very gravelly loam

## **296376—Wellsboro channery loam, 3 to 8 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 1,095 to 1,800 feet  
*Mean annual precipitation:* 32 to 50 inches  
*Mean annual air temperature:* 45 to 50 degrees F  
*Frost-free period:* 110 to 180 days



### ***Map Unit Composition***

Wellsboro and similar soils: 80 percent  
Dissimilar minor components: 20 percent

### ***Description of Wellsboro Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landform:* Valley sides  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Base slope  
*Slope:* 3 to 8 percent  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* High  
*Restrictive feature(s):* Fragipan at a depth of 14 to 26 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* About 11 to 22 inches (perched)  
*Drainage class:* Moderately well drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Moderate (about 7.3 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 2w  
*Hydric soil status:* No  
*Hydrologic soil group:* C

#### **Typical Profile**

A—0 to 8 inches; channery loam  
Bw—8 to 17 inches; channery loam  
BE—17 to 21 inches; channery loam  
Bx—21 to 60 inches; channery silt loam  
C—60 to 80 inches; channery loam

### ***Minor Components***

#### **Morris**

*Percent of map unit:* 8 percent  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 3 to 8 percent  
*Hydric soil status:* No

#### **Norwich**

*Percent of map unit:* 8 percent  
*Landform:* Depressions  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 0 to 8 percent

*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil status:* Yes

**Lackawanna**

*Percent of map unit:* 4 percent  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 3 to 8 percent  
*Hydric soil status:* No

**296379—Wellsboro extremely stony loam, 8 to 25 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 600 to 1,800 feet  
*Mean annual precipitation:* 32 to 50 inches  
*Mean annual air temperature:* 45 to 50 degrees F  
*Frost-free period:* 110 to 165 days

***Map Unit Composition***

Wellsboro and similar soils: 85 percent  
Dissimilar minor components: 13 percent

***Description of Wellsboro Soil***

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

**Setting**

*Landform:* Valley sides  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Base slope  
*Slope:* 8 to 25 percent  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* High  
*Restrictive feature(s):* Fragipan at a depth of 14 to 26 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* About 11 to 22 inches (perched)  
*Drainage class:* Moderately well drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Moderate (about 7.3 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No  
*Hydrologic soil group:* C

**Typical Profile**

A—0 to 8 inches; channery loam  
Bw—8 to 17 inches; channery loam  
BE—17 to 21 inches; channery loam  
Bx—21 to 60 inches; channery silt loam  
C—60 to 80 inches; channery loam

**Minor Components**

**Lackawanna**

*Percent of map unit:* 8 percent  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 8 to 25 percent  
*Hydric soil status:* No

**Norwich**

*Percent of map unit:* 3 percent  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 3 to 12 percent  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil status:* Yes

**Morris**

*Percent of map unit:* 2 percent  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 8 to 25 percent  
*Hydric soil status:* No

**296385—Wyoming gravelly sandy loam, 0 to 3 percent slopes**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 400 to 1,800 feet  
*Mean annual precipitation:* 30 to 56 inches  
*Mean annual air temperature:* 45 to 54 degrees F  
*Frost-free period:* 110 to 180 days

**Map Unit Composition**

Wyoming and similar soils: 85 percent  
Dissimilar minor components: 10 percent

**Description of Wyoming Soil**

**Soil Classification**

Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

**Setting**

*Landform:* Terraces

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Riser

*Slope:* 0 to 3 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Very low

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Somewhat excessively drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 3.2 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 3s

*Hydric soil status:* No

*Hydrologic soil group:* A

#### **Typical Profile**

0 to 7 inches; gravelly sandy loam

7 to 25 inches; very gravelly sandy loam

25 to 60 inches; extremely gravelly loamy coarse sand

### ***Minor Components***

#### **Braceville**

*Percent of map unit:* 5 percent

*Landform:* Outwash terraces

*Geomorphic position (two-dimensional):* Toeslope

*Geomorphic position (three-dimensional):* Tread

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 2 to 6 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* No

#### **Unadilla**

*Percent of map unit:* 5 percent

*Landform:* Outwash terraces

*Geomorphic position (two-dimensional):* Toeslope

*Geomorphic position (three-dimensional):* Tread

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* No

## **296386—Wyoming gravelly sandy loam, 3 to 8 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,800 feet

*Mean annual precipitation:* 30 to 56 inches

*Mean annual air temperature:* 45 to 54 degrees F

*Frost-free period:* 110 to 180 days

### ***Map Unit Composition***

Wyoming and similar soils: 85 percent

Dissimilar minor components: 10 percent

### ***Description of Wyoming Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

#### **Setting**

*Landform:* Terraces

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Riser

*Slope:* 3 to 8 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Low

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Somewhat excessively drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 3.2 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 3s

*Hydric soil status:* No

*Hydrologic soil group:* A

#### **Typical Profile**

0 to 7 inches; gravelly sandy loam

7 to 25 inches; very gravelly sandy loam

25 to 60 inches; extremely gravelly loamy coarse sand

### ***Minor Components***

#### **Braceville**

*Percent of map unit:* 5 percent

*Landform:* Outwash terraces

*Geomorphic position (two-dimensional):* Toeslope

*Geomorphic position (three-dimensional):* Tread

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 2 to 6 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* No

**Unadilla**

*Percent of map unit:* 5 percent

*Landform:* Outwash terraces

*Geomorphic position (two-dimensional):* Toeslope

*Geomorphic position (three-dimensional):* Tread

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* No

**296387—Wyoming gravelly sandy loam, 8 to 15 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,800 feet

*Mean annual precipitation:* 30 to 56 inches

*Mean annual air temperature:* 45 to 54 degrees F

*Frost-free period:* 110 to 180 days

***Map Unit Composition***

Wyoming and similar soils: 85 percent

Dissimilar minor components: 12 percent

***Description of Wyoming Soil***

**Soil Classification**

Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

**Setting**

*Landform:* Terraces

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Riser

*Slope:* 8 to 15 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* Low

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches  
*Drainage class:* Somewhat excessively drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Low (about 3.2 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 4s  
*Hydric soil status:* No  
*Hydrologic soil group:* A

**Typical Profile**

0 to 7 inches; gravelly sandy loam  
7 to 25 inches; very gravelly sandy loam  
25 to 60 inches; extremely gravelly loamy coarse sand

**Minor Components**

**Braceville**

*Percent of map unit:* 7 percent  
*Landform:* Outwash terraces  
*Geomorphic position (two-dimensional):* Toeslope  
*Geomorphic position (three-dimensional):* Tread  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 2 to 6 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil status:* No

**Unadilla**

*Percent of map unit:* 5 percent  
*Landform:* Outwash terraces  
*Geomorphic position (two-dimensional):* Toeslope  
*Geomorphic position (three-dimensional):* Tread  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 8 to 15 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil status:* No

**296388—Wyoming gravelly sandy loam, 15 to 25 percent slopes**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 400 to 1,800 feet  
*Mean annual precipitation:* 30 to 50 inches  
*Mean annual air temperature:* 45 to 54 degrees F  
*Frost-free period:* 110 to 180 days

**Map Unit Composition**

Wyoming and similar soils: 85 percent  
Dissimilar minor components: 5 percent



### ***Description of Wyoming Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

#### **Setting**

*Landform:* Terraces

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Riser

*Slope:* 15 to 25 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Medium

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Somewhat excessively drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 3.2 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 4e

*Hydric soil status:* No

*Hydrologic soil group:* A

#### **Typical Profile**

0 to 7 inches; gravelly sandy loam

7 to 25 inches; very gravelly sandy loam

25 to 60 inches; extremely gravelly loamy coarse sand

### ***Minor Components***

#### **Unadilla**

*Percent of map unit:* 5 percent

*Landform:* Outwash terraces

*Geomorphic position (two-dimensional):* Toeslope

*Geomorphic position (three-dimensional):* Tread

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 8 to 15 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* No

## **296389—Wyoming gravelly sandy loam, 25 to 70 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,800 feet  
*Mean annual precipitation:* 42 to 50 inches  
*Mean annual air temperature:* 46 to 52 degrees F  
*Frost-free period:* 110 to 145 days

### **Map Unit Composition**

Wyoming and similar soils: 100 percent

### **Description of Wyoming Soil**

#### **Soil Classification**

Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

#### **Setting**

*Landform:* Terraces  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Riser  
*Slope:* 25 to 70 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Medium  
*Parent material:* Water-sorted gravelly outwash derived from sandstone, siltstone, and/or shale  
*Restrictive feature(s):* None within a depth of 60 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Somewhat excessively drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Low (about 3.3 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7e  
*Hydric soil status:* No  
*Hydrologic soil group:* A

#### **Typical Profile**

0 to 8 inches; very gravelly sandy loam  
8 to 26 inches; very gravelly sandy loam  
26 to 60 inches; stratified sand to very gravelly loamy sand

## **296390 (W)—Water**

### **Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Mean annual precipitation:* 34 to 51 inches  
*Mean annual air temperature:* 40 to 50 degrees F  
*Frost-free period:* 100 to 160 days

**Map Unit Composition**

Water: 100 percent

**Description of Water**

**Setting**

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

**Properties and Qualities**

*Calcium carbonate equivalent (maximum weight percentage):* 0

**Interpretive Groups**

*Hydric soil status:* Unranked

**297185—Edgemere-Shohola complex, 3 to 15 percent slopes, very rubbly**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 600 to 1,800 feet

*Mean annual precipitation:* 30 to 50 inches

*Mean annual air temperature:* 45 to 50 degrees F

*Frost-free period:* 110 to 150 days

**Map Unit Composition**

Edgemere and similar soils: 42 percent

Shohola and similar soils: 42 percent

Dissimilar minor components: 16 percent

**Description of Edgemere Soil**

**Soil Classification**

Loamy-skeletal, mixed, superactive, mesic Typic Fragiaquepts

**Setting**

*Landform:* Depressions

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Mountainbase, base slope, flat

*Slope:* 3 to 8 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* Negligible

*Restrictive feature(s):* Fragipan at a depth of 15 to 25 inches

*Frequency of flooding:* None

*Frequency of ponding:* Frequent

*Depth to water table:* At the surface to a depth of 6 inches (perched)

*Drainage class:* Very poorly drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 5.2 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* Yes

*Hydrologic soil group:* D

**Typical Profile**

Oe—0 to 2 inches; extremely stony mucky peat

A/E—2 to 5 inches; extremely stony loam

Bg—5 to 24 inches; very stony loam

Bx—24 to 66 inches; very gravelly sandy loam

**Description of Shohola Soil**

**Soil Classification**

Loamy-skeletal, mixed, active, mesic Aeric Fragiaquepts

**Setting**

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Base slope

*Slope:* 3 to 15 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* Very high

*Restrictive feature(s):* Fragipan at a depth of 18 to 30 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 6 to 18 inches (perched)

*Drainage class:* Somewhat poorly drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.6 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

A—0 to 3 inches; very flaggy loam

B—3 to 24 inches; very flaggy loam

Bx—24 to 72 inches; very flaggy fine sandy loam

**Minor Components**

**Mardin**

*Percent of map unit:* 11 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Hydric soil status:* No

**Freetown**

*Percent of map unit:* 5 percent

*Landform:* Swamps

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 2 percent

*Hydric soil status:* Yes

**297186—Edgemere extremely stony loam, 0 to 3 percent slopes, very rubbly**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,800 feet

*Mean annual precipitation:* 30 to 50 inches

*Mean annual air temperature:* 45 to 54 degrees F

*Frost-free period:* 110 to 180 days

***Map Unit Composition***

Edgemere and similar soils: 75 percent

Dissimilar minor components: 25 percent

***Description of Edgemere Soil***

**Soil Classification**

Loamy-skeletal, mixed, superactive, mesic Typic Fragiaquepts

**Setting**

*Landform:* Depressions

*Slope:* 0 to 3 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* Negligible

*Restrictive feature(s):* Fragipan at a depth of 15 to 25 inches

*Frequency of flooding:* None

*Frequency of ponding:* Occasional

*Depth to water table:* At the surface to a depth of 6 inches (perched)

*Drainage class:* Poorly drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 5.2 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* Yes

*Hydrologic soil group:* D

**Typical Profile**

Oe—0 to 2 inches; extremely stony mucky peat

A/E—2 to 5 inches; extremely stony loam

Bw—5 to 24 inches; very stony loam

C—24 to 66 inches; very gravelly sandy loam

### **Minor Components**

#### **Shohola**

*Percent of map unit:* 10 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Hydric soil status:* No

#### **Mardin**

*Percent of map unit:* 7 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Hydric soil status:* No

#### **Freetown**

*Percent of map unit:* 4 percent

*Landform:* Swamps

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 1 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* Yes

#### **Wyalusing**

*Percent of map unit:* 4 percent

*Landform:* Flood plains

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Down-slope shape:* Linear

*Across-slope shape:* Concave

*Hydric soil status:* Yes

## **297188—Manlius-Arnot-Rock outcrop complex, 15 to 30 percent slopes, rubbly**

### **Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 200 to 1,800 feet

*Mean annual precipitation:* 30 to 51 inches

*Mean annual air temperature:* 40 to 52 degrees F

*Frost-free period:* 100 to 200 days

### **Map Unit Composition**

Manlius and similar soils: 40 percent

Arnot and similar soils: 35 percent

Rock outcrop: 15 percent

Dissimilar minor components: 10 percent

### ***Description of Manlius Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

#### **Setting**

*Landform:* Valley sides

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Slope:* 15 to 30 percent

*Down-slope shape:* Convex, linear

*Across-slope shape:* Linear, convex

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Very high

*Parent material:* Channery till derived from shale

*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 40 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 2.8 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

#### **Typical Profile**

A—0 to 5 inches; very channery silt loam

Bw—5 to 24 inches; very channery loam

C—24 to 30 inches; extremely channery loam

R—30 to 40 inches; unweathered bedrock

### ***Description of Arnot Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts

#### **Setting**

*Landform:* Valley sides

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Nose slope, side slope

*Slope:* 15 to 30 percent

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* High

*Restrictive feature(s):* Lithic bedrock at a depth of 10 to 20 inches

*Frequency of flooding:* None



*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Somewhat excessively drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Very low (about 1.5 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s  
*Hydric soil status:* No  
*Hydrologic soil group:* C/D

**Typical Profile**

A—0 to 3 inches; very channery loam  
Bw—3 to 14 inches; very channery loam  
2R—14 to 24 inches; unweathered bedrock

***Description of Rock Outcrop***

**Setting**

*Slope:* 15 to 30 percent  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects

**Properties and Qualities**

*Restrictive feature(s):* Bedrock at the surface  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Calcium carbonate equivalent (maximum weight percentage):* 0

**Interpretive Groups**

*Hydric soil status:* No

***Minor Components***

**Mardin**

*Percent of map unit:* 6 percent  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 8 to 15 percent  
*Hydric soil status:* No

**Rubble land**

*Percent of map unit:* 4 percent  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Hydric soil status:* No

**297189—Manlius-Arnot-Rock outcrop complex, 30 to 80 percent slopes, rubbly**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 200 to 1,800 feet

*Mean annual precipitation:* 30 to 51 inches  
*Mean annual air temperature:* 40 to 52 degrees F  
*Frost-free period:* 100 to 200 days

### ***Map Unit Composition***

Manlius and similar soils: 40 percent  
Arnot and similar soils: 35 percent  
Rock outcrop: 15 percent  
Dissimilar minor components: 10 percent

### ***Description of Manlius Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

#### **Setting**

*Landform:* Valley sides  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Slope:* 30 to 80 percent  
*Down-slope shape:* Convex, linear  
*Across-slope shape:* Linear, convex  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Very high  
*Parent material:* Channery till derived from shale  
*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 40 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Very low (about 2.8 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s  
*Hydric soil status:* No  
*Hydrologic soil group:* C

#### **Typical Profile**

A—0 to 5 inches; very channery silt loam  
Bw—5 to 24 inches; very channery loam  
C—24 to 30 inches; extremely channery loam  
R—30 to 40 inches; unweathered bedrock

### ***Description of Arnot Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts

#### **Setting**

*Landform:* Valley sides  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Nose slope, side slope

*Slope:* 30 to 80 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* High  
*Restrictive feature(s):* Lithic bedrock at a depth of 10 to 20 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Somewhat excessively drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Very low (about 1.5 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s  
*Hydric soil status:* No  
*Hydrologic soil group:* C/D

**Typical Profile**

A—0 to 3 inches; very channery loam  
Bw—3 to 14 inches; very channery loam  
2R—14 to 24 inches; unweathered bedrock

**Description of Rock Outcrop**

**Setting**

*Slope:* 30 to 80 percent  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects

**Properties and Qualities**

*Restrictive feature(s):* Bedrock at the surface  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Calcium carbonate equivalent (maximum weight percentage):* 0

**Interpretive Groups**

*Hydric soil status:* No

**Minor Components**

**Mardin**

*Percent of map unit:* 6 percent  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 8 to 15 percent  
*Hydric soil status:* No

**Rubble land**

*Percent of map unit:* 4 percent  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Hydric soil status:* No

## **297190—Braceville fine sandy loam**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,800 feet

*Mean annual precipitation:* 34 to 51 inches

*Mean annual air temperature:* 40 to 52 degrees F

*Frost-free period:* 100 to 160 days

### ***Map Unit Composition***

Braceville and similar soils: 82 percent

Dissimilar minor components: 18 percent

### ***Description of Braceville Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landform:* Outwash terraces

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Tread

*Slope:* 0 to 3 percent

*Down-slope shape:* Linear, convex

*Across-slope shape:* Linear, concave

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Low

*Restrictive feature(s):* Fragipan at a depth of 15 to 30 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 6 to 30 inches (perched)

*Drainage class:* Moderately well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 7.4 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 2w

*Hydric soil status:* No

*Hydrologic soil group:* C

#### **Typical Profile**

Ap—0 to 11 inches; fine sandy loam

Bw—11 to 27 inches; fine sandy loam

Bx—27 to 48 inches; fine sandy loam

C—48 to 70 inches; loamy sand

### ***Minor Components***

#### **Wyoming**

*Percent of map unit:* 9 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Hydric soil status:* No

**Chenango**

*Percent of map unit:* 6 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Hydric soil status:* No

**Rexford, poorly drained**

*Percent of map unit:* 3 percent

*Landform:* Outwash terraces

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* Yes

## **297191—Wyalusing fine sandy loam**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 3,500 feet

*Mean annual precipitation:* 30 to 50 inches

*Mean annual air temperature:* 45 to 55 degrees F

*Frost-free period:* 110 to 190 days

### ***Map Unit Composition***

Wyalusing and similar soils: 85 percent

Dissimilar minor components: 15 percent

### ***Description of Wyalusing Soil***

#### **Soil Classification**

Coarse-loamy over sandy or sandy-skeletal, mixed, active, nonacid, mesic Typic Fluvaquents

#### **Setting**

*Landform:* Flood plains

*Slope:* 0 to 3 percent

*Down-slope shape:* Linear

*Across-slope shape:* Concave

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Very high

*Parent material:* Coarse-loamy alluvium over sandy and gravelly alluvium

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* Frequent

*Frequency of ponding:* None

*Depth to water table:* At the surface to a depth of 6 inches

*Drainage class:* Poorly drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 6.6 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 4w

*Hydric soil status:* Yes

*Hydrologic soil group:* D

**Typical Profile**

A—0 to 6 inches; fine sandy loam

Bg—6 to 31 inches; fine sandy loam

2C—31 to 70 inches; very cobbly loamy sand

**Minor Components**

**Barbour**

*Percent of map unit:* 7 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Hydric soil status:* No

**Craigsville**

*Percent of map unit:* 6 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 5 percent

*Hydric soil status:* No

**Pope**

*Percent of map unit:* 2 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Hydric soil status:* No

**297192—Pope fine sandy loam**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 800 feet

*Mean annual precipitation:* 30 to 51 inches

*Mean annual air temperature:* 40 to 54 degrees F

*Frost-free period:* 100 to 180 days

**Map Unit Composition**

Pope and similar soils: 95 percent

Dissimilar minor components: 5 percent

**Description of Pope Soil**

**Soil Classification**

Coarse-loamy, mixed, active, mesic Fluventic Dystrudepts

**Setting**

*Landform:* Flood plains

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Riser

*Slope:* 0 to 3 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Very low

*Parent material:* Acid alluvium derived from sedimentary rock

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* Frequent

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* High (about 9.8 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 2w

*Hydric soil status:* No

*Hydrologic soil group:* B

#### **Typical Profile**

Ap—0 to 6 inches; fine sandy loam

Bw—6 to 33 inches; fine sandy loam

C—33 to 70 inches; sandy loam

#### **Minor Components**

##### **Wyalusing**

*Percent of map unit:* 5 percent

*Landform:* Flood plains

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Hydric soil status:* Yes

## **297193—Paupack mucky peat**

#### **Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 600 to 2,000 feet

*Mean annual precipitation:* 35 to 50 inches

*Mean annual air temperature:* 46 to 50 degrees F

*Frost-free period:* 110 to 180 days

#### **Map Unit Composition**

Paupack and similar soils: 90 percent

Dissimilar minor components: 10 percent



### ***Description of Paupack Soil***

#### **Soil Classification**

Loamy-skeletal or clayey-skeletal, mixed, dysic, mesic Terric Medisaprist

#### **Setting**

*Landform:* Swamps

*Slope:* 0 to 2 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Negligible

*Parent material:* Woody organic material over gravelly alluvium

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* Frequent

*Depth to water table:* At the surface to a depth of 6 inches

*Drainage class:* Very poorly drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very high (about 18.8 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 5w

*Hydric soil status:* Yes

*Hydrologic soil group:* D

#### **Vegetation**

*Existing plants:* Silky dogwood, tamarack, rhododendron, and highbush blueberry

#### **Typical Profile**

Oe—0 to 3 inches; mucky peat

Oa1—3 to 26 inches; muck

Oa2—26 to 36 inches; very stony muck

Cg—36 to 70 inches; extremely stony sandy loam

### ***Minor Components***

#### **Edgemere**

*Percent of map unit:* 8 percent

*Landform:* Depressions

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* Yes

#### **Kimbles**

*Percent of map unit:* 2 percent

*Landform:* Depressions

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 2 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* Yes

## **297196—Freetown mucky peat**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 800 to 1,800 feet

*Mean annual precipitation:* 34 to 51 inches

*Mean annual air temperature:* 40 to 50 degrees F

*Frost-free period:* 100 to 200 days

### ***Map Unit Composition***

Freetown and similar soils: 94 percent

Dissimilar minor components: 6 percent

### ***Description of Freetown Soil***

#### **Soil Classification**

Dysic, mesic Typic Medisaprists

#### **Setting**

*Landform:* Swamps

*Slope:* 0 to 1 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Negligible

*Parent material:* Highly decomposed organic material

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* Frequent

*Depth to water table:* At the surface to a depth of 6 inches

*Drainage class:* Very poorly drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very high (about 28.8 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 5w

*Hydric soil status:* Yes

*Hydrologic soil group:* D

#### **Typical Profile**

Oe—0 to 6 inches; mucky peat

Oa—6 to 72 inches; muck

### ***Minor Components***

#### **Gleneyre**

*Percent of map unit:* 6 percent

*Landform:* Relict lakebeds

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 1 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* Yes

## **297197—Manlius very channery silt loam, 3 to 8 percent slopes, very bouldery**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 200 to 1,800 feet

*Mean annual precipitation:* 30 to 50 inches

*Mean annual air temperature:* 45 to 52 degrees F

*Frost-free period:* 110 to 200 days

### ***Map Unit Composition***

Manlius and similar soils: 90 percent

Dissimilar minor components: 10 percent

### ***Description of Manlius Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

#### **Setting**

*Landform:* Valley sides

*Landform position (two-dimensional):* Summit

*Landform position (three-dimensional):* Side slope, interfluvium

*Slope:* 3 to 8 percent

*Down-slope shape:* Convex, linear

*Across-slope shape:* Linear, convex

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* High

*Parent material:* Channery till derived from shale

*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 40 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 3.0 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 6s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

A—0 to 5 inches; very channery silt loam  
Bw—5 to 24 inches; very channery loam  
C—24 to 30 inches; extremely channery loam  
R—30 to 40 inches; unweathered bedrock

**Minor Components**

**Mardin**

*Percent of map unit:* 7 percent  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 0 to 8 percent  
*Hydric soil status:* No

**Edgemere**

*Percent of map unit:* 3 percent  
*Landform:* Depressions  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil status:* Yes

**297198—Manlius very channery silt loam, 8 to 15 percent slopes, very bouldery**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 200 to 1,800 feet  
*Mean annual precipitation:* 30 to 50 inches  
*Mean annual air temperature:* 45 to 52 degrees F  
*Frost-free period:* 110 to 200 days

**Map Unit Composition**

Manlius and similar soils: 86 percent  
Dissimilar minor components: 14 percent

**Description of Manlius Soil**

**Soil Classification**

Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

**Setting**

*Landform:* Valley sides  
*Landform position (two-dimensional):* Shoulder  
*Landform position (three-dimensional):* Side slope  
*Slope:* 8 to 15 percent  
*Down-slope shape:* Convex, linear  
*Across-slope shape:* Linear, convex  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* High

*Parent material:* Channery till derived from shale

*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 40 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 3.0 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 6s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

A—0 to 5 inches; very channery silt loam

Bw—5 to 24 inches; very channery loam

C—24 to 30 inches; extremely channery loam

R—30 to 40 inches; unweathered bedrock

***Minor Components***

**Mardin**

*Percent of map unit:* 10 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 8 to 15 percent

*Hydric soil status:* No

**Edgemere**

*Percent of map unit:* 2 percent

*Landform:* Depressions

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 10 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* Yes

**Rock outcrop**

*Percent of map unit:* 2 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Hydric soil status:* No

**297201—Oquaga very stony loam, 15 to 30 percent slopes, extremely bouldery**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 600 to 1,800 feet

*Mean annual precipitation:* 32 to 50 inches  
*Mean annual air temperature:* 45 to 52 degrees F  
*Frost-free period:* 110 to 180 days

### **Map Unit Composition**

Oquaga and similar soils: 75 percent  
Dissimilar minor components: 20 percent

### **Description of Oquaga Soil**

#### **Soil Classification**

Loamy-skeletal, mixed, superactive, mesic Typic Dystrudepts

#### **Setting**

*Landscape:* Glaciated uplands  
*Landform:* Hillslopes  
*Landform position (two-dimensional):* Shoulder  
*Landform position (three-dimensional):* Side slope  
*Slope:* 15 to 30 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* High  
*Parent material:* Reddish ablation till derived from sandstone and siltstone  
*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 40 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Very low (about 2.6 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 6s  
*Hydric soil status:* No  
*Hydrologic soil group:* C

#### **Typical Profile**

A—0 to 2 inches; very channery loam  
Bw—2 to 26 inches; very stony loam  
C—26 to 32 inches; extremely stony sandy loam  
R—32 to 42 inches; unweathered bedrock

### **Minor Components**

#### **Wellsboro**

*Percent of map unit:* 7 percent  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 15 to 25 percent  
*Hydric soil status:* No

#### **Rock outcrop**

*Percent of map unit:* 6 percent

*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Hydric soil status:* No

**Lackawanna**

*Percent of map unit:* 5 percent  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 8 to 15 percent  
*Hydric soil status:* No

**Shohola**

*Percent of map unit:* 2 percent  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 8 to 15 percent  
*Hydric soil status:* No

**297203—Delaware fine sandy loam, 0 to 3 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 400 to 1,095 feet  
*Mean annual precipitation:* 35 to 50 inches  
*Mean annual air temperature:* 45 to 52 degrees F  
*Frost-free period:* 110 to 200 days

***Map Unit Composition***

Delaware and similar soils: 93 percent  
Dissimilar minor components: 7 percent

***Description of Delaware Soil***

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Dystrudepts

**Setting**

*Landscape:* River valleys  
*Landform:* Low to middle river terraces  
*Landform position (two-dimensional):* Backslope, footslope  
*Landform position (three-dimensional):* Tread  
*Slope:* 0 to 3 percent  
*Down-slope shape:* Linear, convex  
*Across-slope shape:* Linear, convex  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* Very low  
*Parent material:* Postglacial alluvium derived from sandstone and shale  
*Restrictive feature(s):* Lithic bedrock at a depth of 72 to 99 inches  
*Frequency of flooding:* Rare  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches



*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Moderate (about 9.0 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 1  
*Hydric soil status:* No  
*Hydrologic soil group:* B

**Typical Profile**

Ap—0 to 14 inches; fine sandy loam  
Bw—14 to 48 inches; fine sandy loam  
C—48 to 72 inches; fine sandy loam

**Minor Components**

**Pope**

*Percent of map unit:* 4 percent  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 0 to 3 percent  
*Hydric soil status:* No

**Chenango**

*Percent of map unit:* 2 percent  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 0 to 8 percent  
*Hydric soil status:* No

**Barbour**

*Percent of map unit:* 1 percent  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 0 to 3 percent  
*Hydric soil status:* No

**297204—Delaware fine sandy loam, 3 to 8 percent slopes**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 400 to 1,095 feet  
*Mean annual precipitation:* 35 to 50 inches  
*Mean annual air temperature:* 45 to 52 degrees F  
*Frost-free period:* 110 to 200 days

**Map Unit Composition**

Delaware and similar soils: 82 percent  
Dissimilar minor components: 18 percent

**Description of Delaware Soil**

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Dystrudepts

### **Setting**

*Landscape:* River valleys

*Landform:* Low to middle river terraces

*Landform position (two-dimensional):* Backslope, footslope

*Landform position (three-dimensional):* Tread

*Slope:* 3 to 8 percent

*Down-slope shape:* Linear, convex

*Across-slope shape:* Linear, convex

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

### **Properties and Qualities**

*Runoff:* Low

*Parent material:* Postglacial alluvium derived from sandstone and shale

*Restrictive feature(s):* Lithic bedrock at a depth of 72 to 99 inches

*Frequency of flooding:* Rare

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 9.0 inches)

### **Interpretive Groups**

*Land capability classification (nonirrigated):* 2e

*Hydric soil status:* No

*Hydrologic soil group:* B

### **Typical Profile**

Ap—0 to 14 inches; fine sandy loam

Bw—14 to 48 inches; fine sandy loam

C—48 to 72 inches; fine sandy loam

## **Minor Components**

### **Chenango**

*Percent of map unit:* 9 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Hydric soil status:* No

### **Pope**

*Percent of map unit:* 6 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Hydric soil status:* No

### **Barbour**

*Percent of map unit:* 3 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Hydric soil status:* No

## **297205—Delaware fine sandy loam, 8 to 20 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,095 feet

*Mean annual precipitation:* 35 to 50 inches

*Mean annual air temperature:* 45 to 52 degrees F

*Frost-free period:* 110 to 200 days

### ***Map Unit Composition***

Delaware and similar soils: 80 percent

Dissimilar minor components: 20 percent

### ***Description of Delaware Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Dystrudepts

#### **Setting**

*Landscape:* River valleys

*Landform:* Low to middle river terraces

*Landform position (two-dimensional):* Backslope, footslope

*Landform position (three-dimensional):* Tread

*Slope:* 8 to 20 percent

*Down-slope shape:* Linear, convex

*Across-slope shape:* Linear, convex

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Low

*Parent material:* Postglacial alluvium derived from sandstone and shale

*Restrictive feature(s):* Lithic bedrock at a depth of 72 to 99 inches

*Frequency of flooding:* Rare

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 9.0 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 4e

*Hydric soil status:* No

*Hydrologic soil group:* B

#### **Typical Profile**

Ap—0 to 14 inches; fine sandy loam

Bw—14 to 48 inches; fine sandy loam

C—48 to 72 inches; fine sandy loam

### ***Minor Components***

#### **Pope**

*Percent of map unit:* 8 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Hydric soil status:* No

**Barbour**

*Percent of map unit:* 7 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Hydric soil status:* No

**Chenango**

*Percent of map unit:* 5 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 8 to 15 percent

*Hydric soil status:* No

**297209—Philo loam**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,400 feet

*Mean annual precipitation:* 30 to 50 inches

*Mean annual air temperature:* 45 to 57 degrees F

*Frost-free period:* 110 to 180 days

***Map Unit Composition***

Philo and similar soils: 85 percent

Dissimilar minor components: 12 percent

***Description of Philo Soil***

**Soil Classification**

Coarse-loamy, mixed, active, mesic Fluvaquentic Dystrudepts

**Setting**

*Landform:* Flood plains

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Mountainbase

*Slope:* 0 to 3 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* Low

*Parent material:* Coarse-loamy alluvium derived from sandstone and siltstone

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* Frequent

*Frequency of ponding:* None

*Depth to water table:* About 18 to 36 inches

*Drainage class:* Moderately well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 8.2 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 2w

*Hydric soil status:* No

*Hydrologic soil group:* B

#### **Vegetation**

*Existing plants:* Red maple, American hornbeam, sedge, white ash, and hollyfern

#### **Typical Profile**

Ap—0 to 6 inches; loam

Bw—6 to 36 inches; fine sandy loam

C—36 to 70 inches; stratified sand to very gravelly sandy loam

#### **Minor Components**

##### **Barbour**

*Percent of map unit:* 8 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Hydric soil status:* No

##### **Chenango**

*Percent of map unit:* 2 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Hydric soil status:* No

##### **Wyalusing**

*Percent of map unit:* 2 percent

*Landform:* Flood plains

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* Yes

### **297210—Barbour fine sandy loam**

#### **Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,400 feet

*Mean annual precipitation:* 34 to 51 inches

*Mean annual air temperature:* 40 to 57 degrees F

*Frost-free period:* 100 to 200 days

#### **Map Unit Composition**

Barbour and similar soils: 85 percent

Dissimilar minor components: 14 percent

### ***Description of Barbour Soil***

#### **Soil Classification**

Coarse-loamy over sandy or sandy-skeletal, mixed, active, mesic Fluventic Dystrudepts

#### **Setting**

*Landform:* Flood plains

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Tread

*Slope:* 0 to 3 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Low

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* Occasional

*Frequency of ponding:* None

*Depth to water table:* About 36 to 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 7.8 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 1

*Hydric soil status:* No

*Hydrologic soil group:* B

#### **Typical Profile**

Ap—0 to 10 inches; fine sandy loam

Bw—10 to 38 inches; fine sandy loam

2C—38 to 72 inches; very cobbly sand

### ***Minor Components***

#### **Pope**

*Percent of map unit:* 7 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Hydric soil status:* No

#### **Philo**

*Percent of map unit:* 4 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Hydric soil status:* No

#### **Delaware**

*Percent of map unit:* 3 percent

*Landform:* Low to middle river terraces

*Geomorphic position (two-dimensional):* Backslope, footslope

*Geomorphic position (three-dimensional):* Tread

*Aspect (representative):* Southeast

*Aspect (range):* All aspects  
*Slope:* 0 to 3 percent  
*Down-slope shape:* Linear, convex  
*Across-slope shape:* Linear, convex  
*Hydric soil status:* No

## **297216—Wurtsboro stony fine sandy loam, 0 to 8 percent slopes, extremely stony**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 600 to 1,800 feet  
*Mean annual precipitation:* 34 to 51 inches  
*Mean annual air temperature:* 40 to 52 degrees F  
*Frost-free period:* 100 to 180 days

### ***Map Unit Composition***

Wurtsboro and similar soils: 92 percent  
Dissimilar minor components: 8 percent

### ***Description of Wurtsboro Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landscape:* Glaciated uplands  
*Landform:* Hills  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Base slope  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Medium  
*Parent material:* Coarse-loamy till derived from sandstone  
*Restrictive feature(s):* Fragipan at a depth of 17 to 28 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* About 12 to 27 inches (perched)  
*Drainage class:* Moderately well drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Moderate (about 7.5 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 6s  
*Hydric soil status:* No  
*Hydrologic soil group:* C



**Typical Profile**

A—0 to 4 inches; stony fine sandy loam

Bw—4 to 22 inches; gravelly fine sandy loam

Bx—22 to 70 inches; gravelly fine sandy loam

**Minor Components**

**Edgemere**

*Percent of map unit:* 3 percent

*Landform:* Depressions

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* Yes

**Shohola**

*Percent of map unit:* 3 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Hydric soil status:* No

**Oquaga**

*Percent of map unit:* 2 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Hydric soil status:* No

**297217—Wurtsboro stony fine sandy loam, 8 to 15 percent slopes, extremely stony**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 600 to 1,800 feet

*Mean annual precipitation:* 34 to 51 inches

*Mean annual air temperature:* 40 to 52 degrees F

*Frost-free period:* 100 to 180 days

**Map Unit Composition**

Wurtsboro and similar soils: 88 percent

Dissimilar minor components: 12 percent

**Description of Wurtsboro Soil**

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

**Setting**

*Landscape:* Glaciated uplands

*Landform:* Hills

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Base slope

*Slope*: 8 to 15 percent  
*Down-slope shape*: Linear  
*Across-slope shape*: Linear  
*Aspect (representative)*: Southeast  
*Aspect (range)*: All aspects  
*Soil temperature regime*: Mesic

#### **Properties and Qualities**

*Runoff*: High  
*Parent material*: Coarse-loamy till derived from sandstone  
*Restrictive feature(s)*: Fragipan at a depth of 17 to 28 inches  
*Frequency of flooding*: None  
*Frequency of ponding*: None  
*Depth to water table*: About 12 to 27 inches (perched)  
*Drainage class*: Moderately well drained  
*Shrink-swell potential*: Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage)*: 0  
*Available water capacity*: Moderate (about 7.5 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated)*: 6s  
*Hydric soil status*: No  
*Hydrologic soil group*: C

#### **Typical Profile**

A—0 to 4 inches; stony fine sandy loam  
Bw—4 to 22 inches; gravelly fine sandy loam  
Bx—22 to 70 inches; gravelly fine sandy loam

### ***Minor Components***

#### **Oquaga**

*Percent of map unit*: 6 percent  
*Aspect (representative)*: Southeast  
*Aspect (range)*: All aspects  
*Slope*: 8 to 15 percent  
*Hydric soil status*: No

#### **Rock outcrop**

*Percent of map unit*: 4 percent  
*Aspect (representative)*: Southeast  
*Aspect (range)*: All aspects  
*Hydric soil status*: No

#### **Edgemere**

*Percent of map unit*: 1 percent  
*Landform*: Depressions  
*Aspect (representative)*: Southeast  
*Aspect (range)*: All aspects  
*Slope*: 3 to 10 percent  
*Down-slope shape*: Concave  
*Across-slope shape*: Concave  
*Hydric soil status*: Yes

#### **Shohola**

*Percent of map unit*: 1 percent  
*Aspect (representative)*: Southeast  
*Aspect (range)*: All aspects

*Slope:* 8 to 15 percent

*Hydric soil status:* No

## **297227—Arnot very channery loam, 3 to 15 percent slopes, very rocky**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 800 to 1,800 feet

*Mean annual precipitation:* 30 to 50 inches

*Mean annual air temperature:* 45 to 50 degrees F

*Frost-free period:* 110 to 180 days

### ***Map Unit Composition***

Arnot and similar soils: 88 percent

Dissimilar minor components: 11 percent

### ***Description of Arnot Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts

#### **Setting**

*Landform:* Valley sides

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Nose slope, side slope

*Slope:* 3 to 15 percent

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Medium

*Restrictive feature(s):* Lithic bedrock at a depth of 10 to 20 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Somewhat excessively drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 1.4 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 6s

*Hydric soil status:* No

*Hydrologic soil group:* C/D

#### **Typical Profile**

A—0 to 3 inches; very channery loam

Bw—3 to 10 inches; very channery loam

C—10 to 14 inches; extremely channery loam

2R—14 to 24 inches; unweathered bedrock

### ***Minor Components***

#### **Rock outcrop**

*Percent of map unit:* 6 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Hydric soil status:* No

#### **Mardin**

*Percent of map unit:* 4 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 8 to 15 percent

*Hydric soil status:* No

#### **Lackawanna**

*Percent of map unit:* 1 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 8 to 15 percent

*Hydric soil status:* No

## **297228—Arnot very channery loam, 15 to 35 percent slopes, very rocky**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 800 to 1,800 feet

*Mean annual precipitation:* 30 to 46 inches

*Mean annual air temperature:* 45 to 50 degrees F

*Frost-free period:* 110 to 180 days

### ***Map Unit Composition***

Arnot and similar soils: 85 percent

Dissimilar minor components: 15 percent

### ***Description of Arnot Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts

#### **Setting**

*Landform:* Valley sides

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Nose slope, side slope

*Slope:* 15 to 35 percent

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* High

*Restrictive feature(s):* Lithic bedrock at a depth of 10 to 20 inches

*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Somewhat excessively drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Very low (about 1.4 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s  
*Hydric soil status:* No  
*Hydrologic soil group:* C/D

**Typical Profile**

A—0 to 3 inches; very channery loam  
Bw—3 to 10 inches; very channery loam  
C—10 to 14 inches; extremely channery loam  
2R—14 to 24 inches; unweathered bedrock

**Minor Components**

**Rock outcrop**

*Percent of map unit:* 8 percent  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Hydric soil status:* No

**Mardin**

*Percent of map unit:* 5 percent  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 8 to 15 percent  
*Hydric soil status:* No

**Swartswood**

*Percent of map unit:* 2 percent  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 15 to 30 percent  
*Hydric soil status:* No

**297229—Wyoming very cobbly sandy loam, 3 to 8 percent slopes**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 400 to 1,800 feet  
*Mean annual precipitation:* 35 to 50 inches  
*Mean annual air temperature:* 45 to 52 degrees F  
*Frost-free period:* 110 to 200 days

**Map Unit Composition**

Wyoming and similar soils: 90 percent  
Dissimilar minor components: 10 percent

### ***Description of Wyoming Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

#### **Setting**

*Landform:* Terraces

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Riser

*Slope:* 3 to 8 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Low

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Somewhat excessively drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 3.9 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 3s

*Hydric soil status:* No

*Hydrologic soil group:* A

#### **Typical Profile**

Ap—0 to 3 inches; very cobbly sandy loam

Bw—3 to 33 inches; very cobbly fine sandy loam

C—33 to 72 inches; extremely cobbly loamy coarse sand

### ***Minor Components***

#### **Delaware**

*Percent of map unit:* 6 percent

*Landform:* Low to middle river terraces

*Geomorphic position (two-dimensional):* Backslope, footslope

*Geomorphic position (three-dimensional):* Tread

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Down-slope shape:* Linear, convex

*Across-slope shape:* Linear, convex

*Hydric soil status:* No

#### **Braceville**

*Percent of map unit:* 2 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Hydric soil status:* No

#### **Suncook**

*Percent of map unit:* 2 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Hydric soil status:* No

## **297230—Wyoming very cobbly sandy loam, 8 to 15 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,800 feet

*Mean annual precipitation:* 35 to 50 inches

*Mean annual air temperature:* 45 to 52 degrees F

*Frost-free period:* 110 to 200 days

### ***Map Unit Composition***

Wyoming and similar soils: 90 percent

Dissimilar minor components: 10 percent

### ***Description of Wyoming Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

#### **Setting**

*Landform:* Terraces

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Riser

*Slope:* 8 to 15 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Low

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Somewhat excessively drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 3.9 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 4s

*Hydric soil status:* No

*Hydrologic soil group:* A

#### **Typical Profile**

Ap—0 to 3 inches; very cobbly sandy loam

Bw—3 to 33 inches; very cobbly fine sandy loam

C—33 to 72 inches; extremely cobbly loamy coarse sand



### ***Minor Components***

#### **Delaware**

*Percent of map unit:* 6 percent  
*Landform:* Low to middle river terraces  
*Geomorphic position (two-dimensional):* Backslope, footslope  
*Geomorphic position (three-dimensional):* Tread  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 8 to 25 percent  
*Down-slope shape:* Linear, convex  
*Across-slope shape:* Linear, convex  
*Hydric soil status:* No

#### **Braceville**

*Percent of map unit:* 2 percent  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 0 to 3 percent  
*Hydric soil status:* No

#### **Suncook**

*Percent of map unit:* 2 percent  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 0 to 3 percent  
*Hydric soil status:* No

## **297231—Wyoming very cobbly sandy loam, 15 to 30 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 400 to 1,800 feet  
*Mean annual precipitation:* 35 to 50 inches  
*Mean annual air temperature:* 45 to 52 degrees F  
*Frost-free period:* 110 to 200 days

### ***Map Unit Composition***

Wyoming and similar soils: 90 percent  
Dissimilar minor components: 10 percent

### ***Description of Wyoming Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

#### **Setting**

*Landform:* Terraces  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Riser  
*Slope:* 15 to 30 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* Medium

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Somewhat excessively drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 3.9 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 4e

*Hydric soil status:* No

*Hydrologic soil group:* A

**Typical Profile**

A—0 to 3 inches; very cobbly sandy loam

Bw—3 to 33 inches; very cobbly fine sandy loam

C—33 to 72 inches; extremely cobbly loamy coarse sand

***Minor Components***

**Suncook**

*Percent of map unit:* 6 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Hydric soil status:* No

**Delaware**

*Percent of map unit:* 3 percent

*Landform:* Low to middle river terraces

*Geomorphic position (two-dimensional):* Backslope, footslope

*Geomorphic position (three-dimensional):* Tread

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 8 to 25 percent

*Down-slope shape:* Linear, convex

*Across-slope shape:* Linear, convex

*Hydric soil status:* No

**Braceville**

*Percent of map unit:* 1 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Hydric soil status:* No

**297236—Suncook loamy sand, 0 to 8 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

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*Elevation:* 400 to 800 feet

*Mean annual precipitation:* 30 to 51 inches

*Mean annual air temperature:* 40 to 54 degrees F

*Frost-free period:* 100 to 180 days

### **Map Unit Composition**

Suncook and similar soils: 91 percent

Dissimilar minor components: 4 percent

### **Description of Suncook Soil**

#### **Soil Classification**

Mixed, mesic Typic Udipsamments

#### **Setting**

*Landform:* Flood plains

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Base slope

*Slope:* 0 to 8 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Very low

*Parent material:* Sandy glaciofluvial deposits derived from sandstone

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* Occasional

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Excessively drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.6 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 3s

*Hydric soil status:* No

*Hydrologic soil group:* A

#### **Vegetation**

*Existing plants:* Striped prince's pine, groundcedar, northern bayberry, hairy moss, and lowbush blueberry

#### **Typical Profile**

A—0 to 10 inches; loamy sand

C—10 to 70 inches; sand

### **Minor Components**

#### **Wyalusing**

*Percent of map unit:* 4 percent

*Landform:* Flood plains

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Hydric soil status:* Yes

## **297237—Mardin channery silt loam, 0 to 8 percent slopes, stony**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 200 to 1,800 feet

*Mean annual precipitation:* 30 to 50 inches

*Mean annual air temperature:* 45 to 52 degrees F

*Frost-free period:* 110 to 200 days

### ***Map Unit Composition***

Mardin and similar soils: 85 percent

Dissimilar minor components: 15 percent

### ***Description of Mardin Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landform:* Hills

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Slope:* 0 to 8 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Medium

*Parent material:* Loamy till

*Restrictive feature(s):* Fragipan at a depth of 14 to 26 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 11 to 22 inches (perched)

*Drainage class:* Moderately well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.0 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 2w

*Hydric soil status:* No

*Hydrologic soil group:* C

#### **Typical Profile**

A—0 to 8 inches; channery silt loam

Bw—8 to 17 inches; channery loam

BE—17 to 21 inches; channery loam

Bx1—21 to 30 inches; channery loam

Bx2—30 to 60 inches; very channery loam

Cd—60 to 80 inches; very channery loam

### ***Minor Components***

#### **Manlius**

*Percent of map unit:* 5 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Hydric soil status:* No

#### **Oquaga**

*Percent of map unit:* 5 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Hydric soil status:* No

#### **Edgemere**

*Percent of map unit:* 3 percent

*Landform:* Depressions

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* Yes

#### **Shohola**

*Percent of map unit:* 2 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Hydric soil status:* No

## **297238—Mardin channery silt loam, 8 to 15 percent slopes, stony**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 200 to 1,800 feet

*Mean annual precipitation:* 30 to 50 inches

*Mean annual air temperature:* 45 to 52 degrees F

*Frost-free period:* 110 to 200 days

### ***Map Unit Composition***

Mardin and similar soils: 85 percent

Dissimilar minor components: 15 percent

### ***Description of Mardin Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landform:* Hills

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Slope:* 8 to 15 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* High

*Parent material:* Loamy till

*Restrictive feature(s):* Fragipan at a depth of 14 to 26 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 11 to 22 inches (perched)

*Drainage class:* Moderately well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.0 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 3e

*Hydric soil status:* No

*Hydrologic soil group:* C

#### **Typical Profile**

A—0 to 8 inches; channery silt loam

Bw—8 to 17 inches; channery loam

BE—17 to 21 inches; channery loam

Bx1—21 to 30 inches; channery loam

Bx2—30 to 60 inches; very channery loam

Cd—60 to 80 inches; very channery loam

### ***Minor Components***

#### **Manlius**

*Percent of map unit:* 5 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 8 to 15 percent

*Hydric soil status:* No

#### **Oquaga**

*Percent of map unit:* 5 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 8 to 15 percent

*Hydric soil status:* No

#### **Edgemere**

*Percent of map unit:* 3 percent

*Landform:* Depressions

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 10 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* Yes

**Shohola**

*Percent of map unit:* 2 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 8 to 15 percent

*Hydric soil status:* No

**297239—Mardin stony loam, 0 to 8 percent slopes,  
extremely stony**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 200 to 1,800 feet

*Mean annual precipitation:* 30 to 50 inches

*Mean annual air temperature:* 45 to 52 degrees F

*Frost-free period:* 110 to 200 days

***Map Unit Composition***

Mardin and similar soils: 85 percent

Dissimilar minor components: 15 percent

***Description of Mardin Soil***

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

**Setting**

*Landform:* Hills

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Slope:* 0 to 8 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* Medium

*Parent material:* Loamy till

*Restrictive feature(s):* Fragipan at a depth of 14 to 26 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 11 to 22 inches (perched)

*Drainage class:* Moderately well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.0 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 6s

*Hydric soil status:* No

*Hydrologic soil group:* C



**Typical Profile**

A/E—0 to 8 inches; stony loam

Bw—8 to 17 inches; channery loam

BE—17 to 21 inches; channery loam

Bx1—21 to 30 inches; channery loam

Bx2—30 to 60 inches; very channery loam

Cd—60 to 80 inches; very channery loam

**Minor Components**

**Manlius**

*Percent of map unit:* 5 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Hydric soil status:* No

**Oquaga**

*Percent of map unit:* 5 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Hydric soil status:* No

**Edgemere**

*Percent of map unit:* 3 percent

*Landform:* Depressions

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* Yes

**Shohola**

*Percent of map unit:* 2 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Hydric soil status:* No

**297240—Mardin stony loam, 8 to 15 percent slopes,  
extremely stony**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 200 to 1,800 feet

*Mean annual precipitation:* 30 to 50 inches

*Mean annual air temperature:* 45 to 52 degrees F

*Frost-free period:* 110 to 200 days

**Map Unit Composition**

Mardin and similar soils: 85 percent

Dissimilar minor components: 14 percent

### ***Description of Mardin Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landform:* Hills

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Slope:* 8 to 15 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* High

*Parent material:* Loamy till

*Restrictive feature(s):* Fragipan at a depth of 14 to 26 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 11 to 22 inches (perched)

*Drainage class:* Moderately well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.0 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 6s

*Hydric soil status:* No

*Hydrologic soil group:* C

#### **Typical Profile**

A/E—0 to 8 inches; stony loam

Bw—8 to 17 inches; channery loam

BE—17 to 21 inches; channery loam

Bx1—21 to 30 inches; channery loam

Bx2—30 to 60 inches; very channery loam

Cd—60 to 80 inches; very channery loam

### ***Minor Components***

#### **Manlius**

*Percent of map unit:* 5 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 8 to 15 percent

*Hydric soil status:* No

#### **Oquaga**

*Percent of map unit:* 4 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 8 to 15 percent

*Hydric soil status:* No

#### **Edgemere**

*Percent of map unit:* 3 percent

*Landform:* Depressions

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 10 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* Yes

**Shohola**

*Percent of map unit:* 2 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 8 to 15 percent

*Hydric soil status:* No

## **297241—Unadilla silt loam**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 895 feet

*Mean annual precipitation:* 42 to 50 inches

*Mean annual air temperature:* 45 to 52 degrees F

*Frost-free period:* 110 to 145 days

### ***Map Unit Composition***

Unadilla and similar soils: 90 percent

Dissimilar minor components: 10 percent

### ***Description of Unadilla Soil***

#### **Soil Classification**

Coarse-silty, mixed, active, mesic Typic Dystrudepts

#### **Setting**

*Landform:* Outwash terraces

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Tread

*Slope:* 0 to 3 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Low

*Parent material:* Outwash

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very high (about 14.7 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 1

*Hydric soil status:* No

*Hydrologic soil group:* B

**Vegetation**

*Existing plants:* Red maple, buttercup, currant, black raspberry, and summer grape

**Typical Profile**

Ap—0 to 13 inches; silt loam

Bw—13 to 49 inches; silt loam

C—49 to 80 inches; silt loam

**Minor Components**

**Braceville**

*Percent of map unit:* 6 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Hydric soil status:* No

**Suncook**

*Percent of map unit:* 4 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Hydric soil status:* No

**297242—Shohola-Edgemere complex, 0 to 8 percent slopes, very rubbly**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 600 to 1,800 feet

*Mean annual precipitation:* 30 to 50 inches

*Mean annual air temperature:* 45 to 50 degrees F

*Frost-free period:* 110 to 150 days

**Map Unit Composition**

Shohola and similar soils: 62 percent

Edgemere and similar soils: 29 percent

Dissimilar minor components: 9 percent

**Description of Shohola Soil**

**Soil Classification**

Loamy-skeletal, mixed, active, mesic Aeric Fragiagquepts

**Setting**

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Base slope

*Slope:* 0 to 8 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* Very high

*Restrictive feature(s):* Fragipan at a depth of 18 to 30 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 6 to 18 inches (perched)

*Drainage class:* Somewhat poorly drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.6 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

A—0 to 3 inches; extremely flaggy loam

B—3 to 24 inches; very flaggy loam

Bx—24 to 72 inches; very gravelly fine sandy loam

***Description of Edgemere Soil***

**Soil Classification**

Loamy-skeletal, mixed, superactive, mesic Typic Fragiaquepts

**Setting**

*Landform:* Depressions

*Slope:* 0 to 8 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* Negligible

*Restrictive feature(s):* Fragipan at a depth of 15 to 25 inches

*Frequency of flooding:* None

*Frequency of ponding:* Occasional

*Depth to water table:* At the surface to a depth of 6 inches (perched)

*Drainage class:* Poorly drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 5.2 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* Yes

*Hydrologic soil group:* D

**Typical Profile**

O—0 to 2 inches; extremely stony mucky peat

A/E—2 to 5 inches; extremely stony loam

Bg—5 to 24 inches; very stony sandy loam

Bx—24 to 66 inches; very gravelly sandy loam

### ***Minor Components***

#### **Mardin**

*Percent of map unit:* 9 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Hydric soil status:* No

## **297243—Shohola-Edgemere complex, 8 to 15 percent slopes, very rubbly**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 600 to 1,800 feet

*Mean annual precipitation:* 30 to 50 inches

*Mean annual air temperature:* 45 to 50 degrees F

*Frost-free period:* 110 to 150 days

### ***Map Unit Composition***

Shohola and similar soils: 62 percent

Edgemere and similar soils: 29 percent

Dissimilar minor components: 9 percent

### ***Description of Shohola Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, active, mesic Aeric Fragiaquepts

#### **Setting**

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Base slope

*Slope:* 8 to 15 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Very high

*Restrictive feature(s):* Fragipan at a depth of 18 to 30 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 6 to 18 inches (perched)

*Drainage class:* Somewhat poorly drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.6 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

A—0 to 3 inches; extremely flaggy loam

B—3 to 24 inches; very flaggy loam

Bx—24 to 72 inches; very gravelly fine sandy loam

***Description of Edgemere Soil***

**Soil Classification**

Loamy-skeletal, mixed, superactive, mesic Typic Fragiaquepts

**Setting**

*Landform:* Depressions

*Slope:* 8 to 15 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* Negligible

*Restrictive feature(s):* Fragipan at a depth of 15 to 25 inches

*Frequency of flooding:* None

*Frequency of ponding:* Occasional

*Depth to water table:* At the surface to a depth of 6 inches (perched)

*Drainage class:* Poorly drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 5.2 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* Yes

*Hydrologic soil group:* D

**Typical Profile**

O—0 to 2 inches; extremely stony mucky peat

A/E—2 to 5 inches; extremely stony loam

Bg—5 to 24 inches; very stony sandy loam

Bx—24 to 66 inches; very gravelly sandy loam

***Minor Components***

**Mardin**

*Percent of map unit:* 9 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 8 to 15 percent

*Hydric soil status:* No

**297244—Lordstown-Swartswood complex, 0 to 8 percent slopes, extremely stony**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 600 to 1,800 feet



*Mean annual precipitation:* 32 to 50 inches  
*Mean annual air temperature:* 45 to 50 degrees F  
*Frost-free period:* 110 to 180 days

### ***Map Unit Composition***

Lordstown and similar soils: 40 percent  
Swartswood and similar soils: 35 percent  
Dissimilar minor components: 25 percent

### ***Description of Lordstown Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Dystrudepts

#### **Setting**

*Landform:* Hills  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Crest, side slope  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Linear, convex  
*Across-slope shape:* Linear, convex  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Low  
*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 40 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Low (about 3.9 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s  
*Hydric soil status:* No  
*Hydrologic soil group:* C

#### **Typical Profile**

A—0 to 3 inches; very channery loam  
Bw—3 to 28 inches; gravelly fine sandy loam  
C—28 to 30 inches; gravelly sandy loam  
2R—30 to 40 inches; unweathered bedrock

### ***Description of Swartswood Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landscape:* Uplands  
*Landform:* Hills  
*Landform position (two-dimensional):* Backslope, footslope  
*Landform position (three-dimensional):* Side slope  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Convex, linear

*Across-slope shape*: Linear, convex

*Aspect (representative)*: Southeast

*Aspect (range)*: All aspects

*Soil temperature regime*: Mesic

#### **Properties and Qualities**

*Runoff*: Low

*Parent material*: Coarse-loamy till derived from sandstone

*Restrictive feature(s)*: Fragipan at a depth of 28 to 36 inches

*Frequency of flooding*: None

*Frequency of ponding*: None

*Depth to water table*: About 26 to 35 inches (perched)

*Drainage class*: Well drained

*Shrink-swell potential*: Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage)*: 0

*Available water capacity*: Moderate (about 6.2 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated)*: 7s

*Hydric soil status*: No

*Hydrologic soil group*: C

#### **Typical Profile**

A—0 to 4 inches; stony fine sandy loam

Bw—4 to 32 inches; channery fine sandy loam

Bx—32 to 70 inches; very gravelly fine sandy loam

#### **Minor Components**

##### **Arnot**

*Percent of map unit*: 10 percent

*Aspect (representative)*: Southeast

*Aspect (range)*: All aspects

*Slope*: 3 to 15 percent

*Hydric soil status*: No

##### **Rock outcrop**

*Percent of map unit*: 10 percent

*Aspect (representative)*: Southeast

*Aspect (range)*: All aspects

*Hydric soil status*: No

##### **Shohola**

*Percent of map unit*: 5 percent

*Aspect (representative)*: Southeast

*Aspect (range)*: All aspects

*Slope*: 0 to 8 percent

*Hydric soil status*: No

## **297247—Chenango gravelly fine sandy loam, 0 to 8 percent slopes**

#### **Map Unit Setting**

*Major land resource area (MLRA)*: 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation*: 400 to 1,400 feet

*Mean annual precipitation*: 35 to 50 inches

*Mean annual air temperature:* 45 to 57 degrees F

*Frost-free period:* 110 to 200 days

### **Map Unit Composition**

Chenango and similar soils: 86 percent

Dissimilar minor components: 14 percent

### **Description of Chenango Soil**

#### **Soil Classification**

Loamy-skeletal, mixed, superactive, mesic Typic Dystrudepts

#### **Setting**

*Landform:* Glacial outwash terraces

*Landform position (three-dimensional):* Riser

*Slope:* 0 to 8 percent

*Down-slope shape:* Convex, linear

*Across-slope shape:* Linear, convex

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Very low

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.5 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 2s

*Hydric soil status:* No

*Hydrologic soil group:* A

#### **Typical Profile**

Ap—0 to 10 inches; gravelly fine sandy loam

Bw—10 to 29 inches; very gravelly fine sandy loam

2C—29 to 70 inches; extremely gravelly loamy coarse sand

### **Minor Components**

#### **Delaware**

*Percent of map unit:* 7 percent

*Landform:* Low to middle river terraces

*Geomorphic position (two-dimensional):* Backslope, footslope

*Geomorphic position (three-dimensional):* Tread

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Down-slope shape:* Linear, convex

*Across-slope shape:* Linear, convex

*Hydric soil status:* No

#### **Braceville**

*Percent of map unit:* 3 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Hydric soil status:* No

**Philo**

*Percent of map unit:* 2 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Hydric soil status:* No

**Unadilla**

*Percent of map unit:* 2 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Hydric soil status:* No

**297248—Chenango gravelly fine sandy loam, 8 to 15 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,095 feet

*Mean annual precipitation:* 35 to 50 inches

*Mean annual air temperature:* 45 to 52 degrees F

*Frost-free period:* 110 to 200 days

***Map Unit Composition***

Chenango and similar soils: 85 percent

Dissimilar minor components: 15 percent

***Description of Chenango Soil***

**Soil Classification**

Loamy-skeletal, mixed, superactive, mesic Typic Dystrudepts

**Setting**

*Landform:* Glacial outwash terraces

*Landform position (three-dimensional):* Riser

*Slope:* 8 to 15 percent

*Down-slope shape:* Convex, linear

*Across-slope shape:* Linear, convex

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

**Properties and Qualities**

*Runoff:* Low

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.5 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 3e

*Hydric soil status:* No

*Hydrologic soil group:* A

**Typical Profile**

Ap—0 to 10 inches; gravelly fine sandy loam

Bw—10 to 29 inches; very gravelly fine sandy loam

2C—29 to 70 inches; extremely gravelly loamy coarse sand

**Minor Components**

**Delaware**

*Percent of map unit:* 9 percent

*Landform:* Low to middle river terraces

*Geomorphic position (two-dimensional):* Backslope, footslope

*Geomorphic position (three-dimensional):* Tread

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 8 to 25 percent

*Down-slope shape:* Linear, convex

*Across-slope shape:* Linear, convex

*Hydric soil status:* No

**Unadilla**

*Percent of map unit:* 6 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Hydric soil status:* No

**297249—Chenango gravelly fine sandy loam, 15 to 25 percent slopes**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,095 feet

*Mean annual precipitation:* 35 to 50 inches

*Mean annual air temperature:* 45 to 52 degrees F

*Frost-free period:* 110 to 200 days

**Map Unit Composition**

Chenango and similar soils: 90 percent

Dissimilar minor components: 10 percent

**Description of Chenango Soil**

**Soil Classification**

Loamy-skeletal, mixed, superactive, mesic Typic Dystrudepts

**Setting**

*Landform:* Glacial outwash terraces

*Landform position (three-dimensional):* Riser

*Slope*: 15 to 25 percent  
*Down-slope shape*: Convex, linear  
*Across-slope shape*: Linear, convex  
*Aspect (representative)*: Southeast  
*Aspect (range)*: All aspects  
*Soil temperature regime*: Mesic

**Properties and Qualities**

*Runoff*: Medium  
*Restrictive feature(s)*: None within a depth of 60 inches  
*Frequency of flooding*: None  
*Frequency of ponding*: None  
*Depth to water table*: More than 72 inches  
*Drainage class*: Well drained  
*Shrink-swell potential*: Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage)*: 0  
*Available water capacity*: Low (about 4.5 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated)*: 4e  
*Hydric soil status*: No  
*Hydrologic soil group*: A

**Typical Profile**

Ap—0 to 10 inches; gravelly fine sandy loam  
Bw—10 to 29 inches; very gravelly fine sandy loam  
2C—29 to 70 inches; extremely gravelly loamy coarse sand

***Minor Components***

**Delaware**

*Percent of map unit*: 8 percent  
*Landform*: Low to middle river terraces  
*Geomorphic position (two-dimensional)*: Backslope, footslope  
*Geomorphic position (three-dimensional)*: Tread  
*Aspect (representative)*: Southeast  
*Aspect (range)*: All aspects  
*Slope*: 8 to 25 percent  
*Down-slope shape*: Linear, convex  
*Across-slope shape*: Linear, convex  
*Hydric soil status*: No

**Unadilla**

*Percent of map unit*: 2 percent  
*Aspect (representative)*: Southeast  
*Aspect (range)*: All aspects  
*Slope*: 0 to 3 percent  
*Hydric soil status*: No

**297253—Craigsville-Wyoming complex, 0 to 8 percent slopes, extremely stony**

***Map Unit Setting***

*Major land resource area (MLRA)*: 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 3,500 feet  
*Mean annual precipitation:* 30 to 50 inches  
*Mean annual air temperature:* 45 to 57 degrees F  
*Frost-free period:* 110 to 190 days

### ***Map Unit Composition***

Craigsville and similar soils: 50 percent  
Wyoming and similar soils: 40 percent  
Dissimilar minor components: 10 percent

### ***Description of Craigsville Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, superactive, mesic Fluventic Dystrudepts

#### **Setting**

*Landscape:* Mountains  
*Landform:* Flood plains  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Base slope  
*Slope:* 0 to 5 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic

#### **Properties and Qualities**

*Runoff:* Very low  
*Restrictive feature(s):* None within a depth of 60 inches  
*Frequency of flooding:* Occasional  
*Frequency of ponding:* None  
*Depth to water table:* About 36 to 72 inches  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Moderate (about 6.5 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 6s  
*Hydric soil status:* No  
*Hydrologic soil group:* B

#### **Vegetation**

*Existing plants:* Flowering dogwood, mountain laurel, sweetgum, tuliptree, shortleaf pine, eastern white pine, white oak, northern red oak, and coralberry

#### **Typical Profile**

A—0 to 5 inches; very gravelly loam  
Bw—5 to 27 inches; very gravelly sandy loam  
C—27 to 77 inches; extremely cobbly loamy sand

### ***Description of Wyoming Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

#### **Setting**

*Landform:* Terraces



*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Riser

*Slope:* 0 to 8 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

### **Properties and Qualities**

*Runoff:* Very low

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Somewhat excessively drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 3.9 inches)

### **Interpretive Groups**

*Land capability classification (nonirrigated):* 6s

*Hydric soil status:* No

*Hydrologic soil group:* A

### **Typical Profile**

A—0 to 3 inches; very cobbly sandy loam

Bw—3 to 33 inches; very cobbly fine sandy loam

C—33 to 72 inches; extremely cobbly loamy coarse sand

## **Minor Components**

### **Wyalusing**

*Percent of map unit:* 6 percent

*Landform:* Flood plains

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Down-slope shape:* Linear

*Across-slope shape:* Concave

*Hydric soil status:* Yes

### **Philo**

*Percent of map unit:* 2 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Hydric soil status:* No

### **Pope**

*Percent of map unit:* 2 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Hydric soil status:* No

## **297254—Pits, shale, and gravel**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Mean annual precipitation:* 36 to 46 inches

*Mean annual air temperature:* 46 to 56 degrees F

*Frost-free period:* 135 to 170 days

### ***Map Unit Composition***

Pits, shale: 40 percent

Pits, gravel: 40 percent

### ***Description of Pits, Shale***

#### **Setting**

*Slope:* 0 to 40 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

#### **Properties and Qualities**

*Runoff:* Medium

*Restrictive feature(s):* Lithic bedrock at the surface to a depth of 2 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Excessively drained

*Calcium carbonate equivalent (maximum weight percentage):* 0

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 8e

*Hydric soil status:* No

*Hydrologic soil group:* D

#### **Typical Profile**

C—0 to 1 inch; channers

R—1 to 2 inches; bedrock

### ***Description of Pits, Gravel***

#### **Setting**

*Slope:* 0 to 40 percent

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

#### **Properties and Qualities**

*Runoff:* Medium

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Excessively drained

*Calcium carbonate equivalent (maximum weight percentage):* 0

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 8e

*Hydric soil status:* No

*Hydrologic soil group:* A

## **298049—Wurtsboro loam, 0 to 8 percent slopes, extremely stony**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,800 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Wurtsboro, extremely stony, and similar soils: 90 percent

Dissimilar minor components: 10 percent

### ***Description of Wurtsboro, Extremely Stony, Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landscape:* Till plains

*Landform:* Ground moraines

*Slope:* 0 to 8 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Very high

*Parent material:* Coarse-loamy till derived from sandstone

*Restrictive feature(s):* Fragipan at a depth of 17 to 28 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 15 to 26 inches (perched)

*Drainage class:* Moderately well drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 7.1 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

#### **Typical Profile**

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 3 inches; loam

E—3 to 5 inches; fine sandy loam

Bhs—5 to 6 inches; fine sandy loam

Bw1—6 to 18 inches; sandy loam

Bw2—18 to 24 inches; gravelly sandy loam

Bx1—24 to 30 inches; gravelly sandy loam

Bx2—30 to 60 inches; gravelly sandy loam

### ***Minor Components***

#### **Swartswood, extremely stony**

*Percent of map unit:* 10 percent

*Landform:* Ground moraines

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* No

### **298050—Wurtsboro-Swartswood complex, 0 to 8 percent slopes, extremely stony**

#### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,100 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

#### ***Map Unit Composition***

Wurtsboro, extremely stony, and similar soils: 60 percent

Swartswood, extremely stony, and similar soils: 40 percent

#### ***Description of Wurtsboro, Extremely Stony, Soil***

##### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

##### **Setting**

*Landscape:* Till plains

*Landform:* Ground moraines

*Slope:* 0 to 8 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

##### **Properties and Qualities**

*Runoff:* Very high

*Parent material:* Bouldery, quartzose, coarse-loamy drift derived from conglomerate

*Restrictive feature(s):* Fragipan at a depth of 17 to 28 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 15 to 26 inches (perched)

*Drainage class:* Moderately well drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 7.1 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated): 7s*

*Hydric soil status: No*

*Hydrologic soil group: C*

**Typical Profile**

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 3 inches; fine sandy loam

E—3 to 4 inches; fine sandy loam

Bhs—4 to 6 inches; fine sandy loam

Bw1—6 to 18 inches; sandy loam

Bw2—18 to 24 inches; gravelly sandy loam

Bx1—24 to 33 inches; gravelly sandy loam

Bx2—33 to 60 inches; gravelly sandy loam

***Description of Swartswood, Extremely Stony, Soil***

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

**Setting**

*Landscape:* Till plains

*Landform:* Ground moraines

*Slope:* 0 to 8 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very high

*Parent material:* Bouldery, quartzose, coarse-loamy drift derived from conglomerate

*Restrictive feature(s):* Fragipan at a depth of 20 to 36 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 5.6 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated): 7s*

*Hydric soil status: No*

*Hydrologic soil group: C*

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; loam

E—2 to 3 inches; fine sandy loam

Bhs—3 to 4 inches; gravelly fine sandy loam

Bw—4 to 21 inches; gravelly fine sandy loam

Bx1—21 to 32 inches; gravelly sandy loam

Bx2—32 to 60 inches; gravelly sandy loam

## **298051—Wurtsboro-Swartswood complex, 8 to 15 percent slopes, extremely stony**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,100 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Wurtsboro, extremely stony, and similar soils: 60 percent

Swartswood, extremely stony, and similar soils: 40 percent

### ***Description of Wurtsboro, Extremely Stony, Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landscape:* Till plains

*Landform:* Ground moraines

*Slope:* 8 to 15 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Very high

*Parent material:* Bouldery, quartzose, coarse-loamy drift derived from conglomerate

*Restrictive feature(s):* Fragipan at a depth of 17 to 28 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 15 to 26 inches (perched)

*Drainage class:* Moderately well drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 7.1 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

#### **Typical Profile**

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 3 inches; fine sandy loam

E—3 to 4 inches; fine sandy loam

Bhs—4 to 6 inches; fine sandy loam

Bw1—6 to 18 inches; sandy loam

Bw2—18 to 24 inches; gravelly sandy loam

Bx1—24 to 33 inches; gravelly sandy loam

Bx2—33 to 60 inches; gravelly sandy loam

***Description of Swartswood, Extremely Stony, Soil***

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

**Setting**

*Landscape:* Till plains

*Landform:* Ground moraines

*Slope:* 8 to 15 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very high

*Parent material:* Bouldery, quartzose, coarse-loamy drift derived from conglomerate

*Restrictive feature(s):* Fragipan at a depth of 20 to 36 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 5.6 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; loam

E—2 to 3 inches; fine sandy loam

Bhs—3 to 4 inches; gravelly fine sandy loam

Bw—4 to 21 inches; gravelly fine sandy loam

Bx1—21 to 32 inches; gravelly sandy loam

Bx2—32 to 60 inches; gravelly sandy loam

**298075—Colonie loamy fine sand, 3 to 8 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,800 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

***Map Unit Composition***

Colonie and similar soils: 80 percent

Dissimilar minor components: 20 percent



### ***Description of Colonie Soil***

#### **Soil Classification**

Mixed, mesic Lamellic Udipsamments

#### **Setting**

*Landscape:* River valleys

*Landform:* Outer terraces

*Slope:* 3 to 8 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Low

*Parent material:* Postglacial sandy alluvium, sandy eolian deposits, and/or glaciofluvial deposits

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Somewhat excessively drained

*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.6 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 2s

*Hydric soil status:* No

*Hydrologic soil group:* A

#### **Typical Profile**

A—0 to 2 inches; loamy fine sand

Ap—2 to 11 inches; loamy fine sand

E—11 to 24 inches; fine sand

E and Bt1—24 to 40 inches; fine sand

E and Bt2—40 to 62 inches; fine sand

### ***Minor Components***

#### **Delaware**

*Percent of map unit:* 10 percent

*Landform:* Outer terraces

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* No

#### **Unadilla**

*Percent of map unit:* 10 percent

*Landform:* Outer terraces

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil status:* No

## **298188—Lackawanna cobbly fine sandy loam, 15 to 35 percent slopes, extremely stony**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 695 to 1,800 feet  
*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Lackawanna, extremely stony, and similar soils: 85 percent  
Dissimilar minor components: 15 percent

### ***Description of Lackawanna, Extremely Stony, Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landscape:* Mountains  
*Landform:* Ground moraines  
*Slope:* 15 to 35 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Very high  
*Parent material:* Coarse-loamy till derived from sandstone and siltstone and/or coarse-loamy till derived from shale  
*Restrictive feature(s):* Fragipan at a depth of 14 to 36 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Moderate (about 6.9 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s  
*Hydric soil status:* No  
*Hydrologic soil group:* C

#### **Vegetation**

*Existing plants:* Red maple, sedge, rare clubmoss, and northern red oak

**Typical Profile**

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 3 inches; cobbly fine sandy loam

E—3 to 7 inches; cobbly fine sandy loam

Bhs—7 to 8 inches; cobbly fine sandy loam

Bw1—8 to 16 inches; stony loam

Bw2—16 to 24 inches; stony loam

Bx1—24 to 29 inches; stony fine sandy loam

Bx2—29 to 60 inches; very cobbly fine sandy loam

**Minor Components**

**Wellsboro, extremely stony**

*Percent of map unit:* 10 percent

*Landform:* Ground moraines

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 15 to 35 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* No

**Oquaga, extremely stony**

*Percent of map unit:* 5 percent

*Landform:* Ground moraines

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 15 to 35 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* No

**298189—Lackawanna cobbly fine sandy loam, 8 to 15 percent slopes, extremely stony**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 695 to 1,800 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

**Map Unit Composition**

Lackawanna, extremely stony, and similar soils: 85 percent

Dissimilar minor components: 15 percent

**Description of Lackawanna, Extremely Stony, Soil**

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

**Setting**

*Landscape:* Mountains

*Landform:* Ground moraines

*Slope:* 8 to 15 percent

*Down-slope shape:* Linear

*Across-slope shape*: Linear  
*Aspect (representative)*: North  
*Aspect (range)*: All aspects  
*Soil temperature regime*: Mesic  
*Soil moisture class*: Udic

**Properties and Qualities**

*Runoff*: Very high  
*Parent material*: Coarse-loamy till derived from sandstone and siltstone and/or coarse-loamy till derived from shale  
*Restrictive feature(s)*: Fragipan at a depth of 14 to 36 inches  
*Frequency of flooding*: None  
*Frequency of ponding*: None  
*Depth to water table*: More than 72 inches  
*Drainage class*: Well drained  
*Shrink-swell potential*: Low (about 0.1 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage)*: 0  
*Available water capacity*: Moderate (about 6.9 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated)*: 7s  
*Hydric soil status*: No  
*Hydrologic soil group*: C

**Vegetation**

*Existing plants*: Red maple, sedge, rare clubmoss, and northern red oak

**Typical Profile**

Oi—0 to 2 inches; slightly decomposed plant material  
A—2 to 3 inches; cobbly fine sandy loam  
E—3 to 7 inches; cobbly fine sandy loam  
Bhs—7 to 8 inches; cobbly fine sandy loam  
Bw1—8 to 16 inches; stony loam  
Bw2—16 to 24 inches; stony loam  
Bx1—24 to 29 inches; stony fine sandy loam  
Bx2—29 to 60 inches; very cobbly fine sandy loam

**Minor Components**

**Wellsboro, extremely stony**

*Percent of map unit*: 10 percent  
*Landform*: Ground moraines  
*Aspect (representative)*: North  
*Aspect (range)*: All aspects  
*Slope*: 8 to 15 percent  
*Down-slope shape*: Linear  
*Across-slope shape*: Linear  
*Hydric soil status*: No

**Oquaga, extremely stony**

*Percent of map unit*: 5 percent  
*Landform*: Ground moraines  
*Aspect (representative)*: North  
*Aspect (range)*: All aspects  
*Slope*: 8 to 15 percent  
*Down-slope shape*: Linear  
*Across-slope shape*: Linear  
*Hydric soil status*: No

## **298221—Swartswood loam, 0 to 8 percent slopes, extremely stony**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,800 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Swartswood, extremely stony, and similar soils: 90 percent

Dissimilar minor components: 10 percent

### ***Description of Swartswood, Extremely Stony, Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landscape:* Till plains

*Landform:* Ground moraines

*Slope:* 0 to 8 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Very high

*Parent material:* Coarse-loamy till derived from sandstone

*Restrictive feature(s):* Fragipan at a depth of 20 to 36 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 5.6 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

#### **Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; loam

E—2 to 3 inches; fine sandy loam

Bhs—3 to 4 inches; gravelly fine sandy loam

Bw—4 to 21 inches; gravelly fine sandy loam

Bx1—21 to 32 inches; gravelly sandy loam

Bx2—32 to 60 inches; gravelly sandy loam

### ***Minor Components***

**Wurtsboro, extremely stony**

*Percent of map unit:* 10 percent

*Landform:* Ground moraines

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* No

## **298222—Swartswood loam, 8 to 15 percent slopes, extremely stony**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,800 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Swartswood, extremely stony, and similar soils: 90 percent

Dissimilar minor components: 10 percent

### ***Description of Swartswood, Extremely Stony, Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landscape:* Till plains

*Landform:* Ground moraines

*Slope:* 8 to 15 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Very high

*Parent material:* Coarse-loamy till derived from sandstone

*Restrictive feature(s):* Fragipan at a depth of 20 to 36 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 5.6 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated): 7s*

*Hydric soil status: No*

*Hydrologic soil group: C*

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; loam

E—2 to 3 inches; fine sandy loam

Bhs—3 to 4 inches; gravelly fine sandy loam

Bw—4 to 21 inches; gravelly fine sandy loam

Bx1—21 to 32 inches; gravelly sandy loam

Bx2—32 to 60 inches; gravelly sandy loam

**Minor Components**

**Wurtsboro, extremely stony**

*Percent of map unit: 10 percent*

*Landform: Ground moraines*

*Aspect (representative): North*

*Aspect (range): All aspects*

*Slope: 8 to 15 percent*

*Down-slope shape: Convex*

*Across-slope shape: Linear*

*Hydric soil status: No*

**298223—Swartswood loam, 15 to 35 percent slopes,  
extremely stony**

**Map Unit Setting**

*Major land resource area (MLRA): 140—Glaciated Allegheny Plateau and Catskill Mountains*

*Elevation: 400 to 1,800 feet*

*Mean annual precipitation: 30 to 64 inches*

*Mean annual air temperature: 46 to 79 degrees F*

*Frost-free period: 131 to 178 days*

**Map Unit Composition**

Swartswood, extremely stony, and similar soils: 85 percent

Dissimilar minor components: 15 percent

**Description of Swartswood, Extremely Stony, Soil**

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

**Setting**

*Landscape: Till plains*

*Landform: Ground moraines*

*Slope: 15 to 35 percent*

*Down-slope shape: Convex*

*Across-slope shape: Linear*

*Aspect (representative): North*

*Aspect (range): All aspects*

*Soil temperature regime: Mesic*

*Soil moisture class: Udic*



**Properties and Qualities**

*Runoff:* Very high

*Parent material:* Coarse-loamy till derived from sandstone

*Restrictive feature(s):* Fragipan at a depth of 20 to 36 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 5.6 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; loam

E—2 to 3 inches; fine sandy loam

Bhs—3 to 4 inches; gravelly fine sandy loam

Bw—4 to 21 inches; gravelly fine sandy loam

Bx1—21 to 32 inches; gravelly sandy loam

Bx2—32 to 60 inches; gravelly sandy loam

**Minor Components**

**Arnot, extremely stony**

*Percent of map unit:* 10 percent

*Landform:* Ground moraines

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 15 to 35 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* No

**Lordstown, extremely stony**

*Percent of map unit:* 5 percent

*Landform:* Ground moraines

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 15 to 35 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* No

**298255—Delaware fine sandy loam, 3 to 8 percent slopes,  
rarely flooded**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,800 feet

*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

### **Map Unit Composition**

Delaware, rarely flooded, and similar soils: 80 percent  
Dissimilar minor components: 20 percent

### **Description of Delaware, Rarely Flooded, Soil**

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Dystrudepts

#### **Setting**

*Landscape:* River valleys  
*Landform:* Terraces  
*Slope:* 3 to 8 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Low  
*Parent material:* Postglacial coarse-loamy alluvium  
*Restrictive feature(s):* None within a depth of 60 inches  
*Frequency of flooding:* Rare  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 0.2 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Moderate (about 8.9 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 2e  
*Hydric soil status:* No  
*Hydrologic soil group:* B

#### **Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material  
Ap1—1 to 4 inches; fine sandy loam  
Ap2—4 to 11 inches; fine sandy loam  
Bw1—11 to 20 inches; fine sandy loam  
Bw2—20 to 33 inches; fine sandy loam  
BC—33 to 41 inches; fine sandy loam  
C1—41 to 56 inches; fine sandy loam  
C2—56 to 60 inches; loam

### **Minor Components**

#### **Colonie**

*Percent of map unit:* 10 percent  
*Landform:* Terraces  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 3 to 8 percent

*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil status:* No

**Unadilla**

*Percent of map unit:* 10 percent  
*Landform:* Terraces  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 3 to 8 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil status:* No

**298256—Delaware fine sandy loam, 0 to 3 percent slopes,  
rarely flooded**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 400 to 1,800 feet  
*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

***Map Unit Composition***

Delaware, rarely flooded, and similar soils: 80 percent  
Dissimilar minor components: 20 percent

***Description of Delaware, Rarely Flooded, Soil***

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Dystrudepts

**Setting**

*Landscape:* River valleys  
*Landform:* Terraces  
*Slope:* 0 to 3 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very low  
*Parent material:* Postglacial coarse-loamy alluvium  
*Restrictive feature(s):* None within a depth of 60 inches  
*Frequency of flooding:* Rare  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 0.2 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Moderate (about 8.9 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 1

*Hydric soil status:* No

*Hydrologic soil group:* B

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

Ap1—1 to 4 inches; fine sandy loam

Ap2—4 to 11 inches; fine sandy loam

Bw1—11 to 20 inches; fine sandy loam

Bw2—20 to 33 inches; fine sandy loam

BC—33 to 41 inches; fine sandy loam

C1—41 to 56 inches; fine sandy loam

C2—56 to 60 inches; loam

**Minor Components**

**Colonie**

*Percent of map unit:* 10 percent

*Landform:* Terraces

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* No

**Unadilla**

*Percent of map unit:* 10 percent

*Landform:* Terraces

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* No

**298257—Wallpack silt loam, 8 to 15 percent slopes**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,495 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

**Map Unit Composition**

Wallpack and similar soils: 85 percent

Dissimilar minor components: 15 percent

**Description of Wallpack Soil**

**Soil Classification**

Coarse-loamy, mixed, semiactive, mesic Typic Fragiudalfs

**Setting**

*Landscape:* Till plains

*Landform:* Ridges

*Slope:* 8 to 15 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very high

*Parent material:* Coarse-loamy till derived from limestone, sandstone, and shale

*Restrictive feature(s):* Fragipan at a depth of 12 to 36 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 6.8 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 3e

*Hydric soil status:* No

*Hydrologic soil group:* B

**Typical Profile**

Ap1—0 to 3 inches; silt loam

Ap2—3 to 9 inches; gravelly silt loam

Bt—9 to 16 inches; gravelly silt loam

Btx1—16 to 25 inches; gravelly silt loam

Btx2—25 to 65 inches; very gravelly silt loam

**Minor Components**

**Cambridge**

*Percent of map unit:* 10 percent

*Landform:* Ridges

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 8 to 15 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* No

**Lordstown**

*Percent of map unit:* 5 percent

*Landform:* Ridges

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 8 to 15 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* No

## **298258—Wallpack silt loam, 15 to 25 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,495 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Wallpack and similar soils: 85 percent

Dissimilar minor components: 15 percent

### ***Description of Wallpack Soil***

#### **Soil Classification**

Coarse-loamy, mixed, semiactive, mesic Typic Fragiudalfs

#### **Setting**

*Landscape:* Till plains

*Landform:* Ridges

*Slope:* 15 to 25 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Very high

*Parent material:* Coarse-loamy till derived from limestone, sandstone, and shale

*Restrictive feature(s):* Fragipan at a depth of 12 to 36 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 6.8 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 4e

*Hydric soil status:* No

*Hydrologic soil group:* B

#### **Typical Profile**

Ap1—0 to 3 inches; silt loam

Ap2—3 to 9 inches; gravelly silt loam

Bt—9 to 16 inches; gravelly silt loam

Btx1—16 to 25 inches; gravelly silt loam

Btx2—25 to 65 inches; very gravelly silt loam

### ***Minor Components***

#### **Cambridge**

*Percent of map unit:* 10 percent

*Landform:* Ridges  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 15 to 25 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Hydric soil status:* No

**Lordstown**

*Percent of map unit:* 5 percent  
*Landform:* Ridges  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 15 to 25 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Hydric soil status:* No

**298259—Wallpack silt loam, 3 to 8 percent slopes,  
extremely stony**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill  
Mountains  
*Elevation:* 400 to 1,495 feet  
*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

***Map Unit Composition***

Wallpack, extremely stony, and similar soils: 85 percent  
Dissimilar minor components: 15 percent

***Description of Wallpack, Extremely Stony, Soil***

**Soil Classification**

Coarse-loamy, mixed, semiactive, mesic Typic Fragiudalfs

**Setting**

*Landscape:* Till plains  
*Landform:* Ridges  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very high  
*Parent material:* Coarse-loamy till derived from limestone, sandstone, and shale  
*Restrictive feature(s):* Fragipan at a depth of 12 to 36 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None



*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 8.0 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* B

#### **Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; gravelly silt loam

AB—2 to 5 inches; gravelly silt loam

Bt—5 to 18 inches; gravelly silt loam

Btx—18 to 24 inches; gravelly loam

BCtx1—24 to 42 inches; gravelly silt loam

BCtx2—42 to 60 inches; gravelly loam

#### **Minor Components**

##### **Cambridge, extremely stony**

*Percent of map unit:* 10 percent

*Landform:* Ridges

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* No

##### **Lordstown, extremely stony**

*Percent of map unit:* 5 percent

*Landform:* Ridges

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* No

### **298260—Wallpack silt loam, 8 to 15 percent slopes, extremely stony**

#### **Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,495 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

#### **Map Unit Composition**

Wallpack, extremely stony, and similar soils: 85 percent

Dissimilar minor components: 15 percent

***Description of Wallpack, Extremely Stony, Soil***

**Soil Classification**

Coarse-loamy, mixed, semiactive, mesic Typic Fragiudalfs

**Setting**

*Landscape:* Till plains

*Landform:* Ridges

*Slope:* 8 to 15 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very high

*Parent material:* Coarse-loamy till derived from limestone, sandstone, and shale

*Restrictive feature(s):* Fragipan at a depth of 12 to 36 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 8.0 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* B

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; gravelly silt loam

AB—2 to 5 inches; gravelly silt loam

Bt—5 to 18 inches; gravelly silt loam

Btx—18 to 24 inches; gravelly loam

BCtx1—24 to 42 inches; gravelly silt loam

BCtx2—42 to 60 inches; gravelly loam

***Minor Components***

**Cambridge, extremely stony**

*Percent of map unit:* 10 percent

*Landform:* Ridges

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 8 to 15 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* No

**Lordstown, extremely stony**

*Percent of map unit:* 5 percent

*Landform:* Ridges

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 8 to 15 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Hydric soil status:* No

## **298261—Wallpack silt loam, 3 to 8 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 400 to 1,495 feet  
*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Wallpack and similar soils: 85 percent  
Dissimilar minor components: 15 percent

### ***Description of Wallpack Soil***

#### **Soil Classification**

Coarse-loamy, mixed, semiactive, mesic Typic Fragiudalfs

#### **Setting**

*Landscape:* Till plains  
*Landform:* Ridges  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Very high  
*Parent material:* Coarse-loamy till derived from limestone, sandstone, and shale  
*Restrictive feature(s):* Fragipan at a depth of 12 to 36 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Moderate (about 6.8 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 2e  
*Hydric soil status:* No  
*Hydrologic soil group:* B

#### **Typical Profile**

Ap1—0 to 3 inches; silt loam  
Ap2—3 to 9 inches; gravelly silt loam  
Bt—9 to 16 inches; gravelly silt loam

Btx1—16 to 25 inches; gravelly silt loam

Btx2—25 to 65 inches; very gravelly silt loam

### ***Minor Components***

#### **Cambridge**

*Percent of map unit:* 10 percent

*Landform:* Ridges

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* No

#### **Lordstown**

*Percent of map unit:* 5 percent

*Landform:* Ridges

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* No

## **298262—Wallpack silt loam, 15 to 35 percent slopes, extremely stony**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,495 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Wallpack, extremely stony, and similar soils: 85 percent

Dissimilar minor components: 15 percent

### ***Description of Wallpack, Extremely Stony, Soil***

#### **Soil Classification**

Coarse-loamy, mixed, semiactive, mesic Typic Fragiudalfs

#### **Setting**

*Landscape:* Till plains

*Landform:* Ridges

*Slope:* 15 to 35 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very high

*Parent material:* Coarse-loamy till derived from limestone, sandstone, and shale

*Restrictive feature(s):* Fragipan at a depth of 12 to 36 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 8.0 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* B

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; gravelly silt loam

AB—2 to 5 inches; gravelly silt loam

Bt—5 to 18 inches; gravelly silt loam

Btx—18 to 24 inches; gravelly loam

BCtx1—24 to 42 inches; gravelly silt loam

BCtx2—42 to 60 inches; gravelly loam

**Minor Components**

**Cambridge, extremely stony**

*Percent of map unit:* 10 percent

*Landform:* Ridges

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 15 to 35 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* No

**Lordstown, extremely stony**

*Percent of map unit:* 5 percent

*Landform:* Ridges

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 15 to 35 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* No

**298265—Venango silt loam, 0 to 8 percent slopes,  
extremely stony**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,000 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

### **Map Unit Composition**

Venango, extremely stony, and similar soils: 90 percent

Dissimilar minor components: 10 percent

### **Description of Venango, Extremely Stony, Soil**

#### **Soil Classification**

Fine-loamy, mixed, active, mesic Aeric Fragiaqualfs

#### **Setting**

*Landscape:* Drumlin fields

*Landform:* Drumlins

*Slope:* 0 to 8 percent

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Aquic

#### **Properties and Qualities**

*Runoff:* Very high

*Parent material:* Fine-loamy till derived from limestone, sandstone, and shale

*Restrictive feature(s):* Fragipan at a depth of 14 to 28 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 6 to 18 inches (perched)

*Drainage class:* Somewhat poorly drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 7.1 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 6s

*Hydric soil status:* No

*Hydrologic soil group:* D

#### **Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 6 inches; silt loam

Bw—6 to 16 inches; silt loam

Btx1—16 to 22 inches; gravelly silty clay loam

Btx2—22 to 34 inches; gravelly silty clay loam

Btx3—34 to 60 inches; gravelly silty clay loam

### **Minor Components**

#### **Chippewa, extremely stony**

*Percent of map unit:* 10 percent

*Landform:* Interdrumlins

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* Yes

## **298266—Venango silt loam, 8 to 15 percent slopes, extremely stony**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,000 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Venango, extremely stony, and similar soils: 85 percent

Dissimilar minor components: 15 percent

### ***Description of Venango, Extremely Stony, Soil***

#### **Soil Classification**

Fine-loamy, mixed, active, mesic Aeric Fragiaqualfs

#### **Setting**

*Landscape:* Drumlin fields

*Landform:* Drumlins

*Slope:* 8 to 15 percent

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Aquic

#### **Properties and Qualities**

*Runoff:* Very high

*Parent material:* Fine-loamy till derived from limestone, sandstone, and shale

*Restrictive feature(s):* Fragipan at a depth of 14 to 28 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 6 to 18 inches (perched)

*Drainage class:* Somewhat poorly drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 7.1 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 6s

*Hydric soil status:* No

*Hydrologic soil group:* D

#### **Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 6 inches; silt loam

Bw—6 to 16 inches; silt loam

Btx1—16 to 22 inches; gravelly silty clay loam

Btx2—22 to 34 inches; gravelly silty clay loam

Btx3—34 to 60 inches; gravelly silty clay loam



### ***Minor Components***

#### **Nassau, extremely stony**

*Percent of map unit:* 10 percent

*Landform:* Drumlins

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 8 to 15 percent

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil status:* No

#### **Manlius, extremely stony**

*Percent of map unit:* 5 percent

*Landform:* Drumlins

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 8 to 15 percent

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil status:* No

### **298409—Swartswood loam, 0 to 8 percent slopes, extremely stony**

#### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,800 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

#### ***Map Unit Composition***

Swartswood, extremely stony, and similar soils: 90 percent

Dissimilar minor components: 10 percent

#### ***Description of Swartswood, Extremely Stony, Soil***

##### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

##### **Setting**

*Landscape:* Till plains

*Landform:* Ground moraines

*Slope:* 0 to 8 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

##### **Properties and Qualities**

*Runoff:* Very high

*Parent material:* Coarse-loamy till derived from sandstone

*Restrictive feature(s)*: Fragipan at a depth of 20 to 36 inches  
*Frequency of flooding*: None  
*Frequency of ponding*: None  
*Depth to water table*: More than 72 inches  
*Drainage class*: Well drained  
*Shrink-swell potential*: Low (about 0.1 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage)*: 0  
*Available water capacity*: Low (about 5.6 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated)*: 7s  
*Hydric soil status*: No  
*Hydrologic soil group*: C

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material  
A—1 to 2 inches; loam  
E—2 to 3 inches; fine sandy loam  
Bhs—3 to 4 inches; gravelly fine sandy loam  
Bw—4 to 21 inches; gravelly fine sandy loam  
Bx1—21 to 32 inches; gravelly sandy loam  
Bx2—32 to 60 inches; gravelly sandy loam

**Minor Components**

**Wurtsboro, extremely stony**

*Percent of map unit*: 10 percent  
*Landform*: Ground moraines  
*Aspect (representative)*: North  
*Aspect (range)*: All aspects  
*Slope*: 0 to 8 percent  
*Down-slope shape*: Convex  
*Across-slope shape*: Linear  
*Hydric soil status*: No

**298411—Swartswood loam, 8 to 15 percent slopes,  
extremely stony**

**Map Unit Setting**

*Major land resource area (MLRA)*: 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation*: 400 to 1,800 feet  
*Mean annual precipitation*: 30 to 64 inches  
*Mean annual air temperature*: 46 to 79 degrees F  
*Frost-free period*: 131 to 178 days

**Map Unit Composition**

Swartswood, extremely stony, and similar soils: 90 percent  
Dissimilar minor components: 10 percent

**Description of Swartswood, Extremely Stony, Soil**

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

**Setting**

*Landscape:* Till plains  
*Landform:* Ground moraines  
*Slope:* 8 to 15 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very high  
*Parent material:* Coarse-loamy till derived from sandstone  
*Restrictive feature(s):* Fragipan at a depth of 20 to 36 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Low (about 5.6 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s  
*Hydric soil status:* No  
*Hydrologic soil group:* C

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material  
A—1 to 2 inches; loam  
E—2 to 3 inches; fine sandy loam  
Bhs—3 to 4 inches; gravelly fine sandy loam  
Bw—4 to 21 inches; gravelly fine sandy loam  
Bx1—21 to 32 inches; gravelly sandy loam  
Bx2—32 to 60 inches; gravelly sandy loam

***Minor Components***

**Wurtsboro, extremely stony**

*Percent of map unit:* 10 percent  
*Landform:* Ground moraines  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 8 to 15 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Hydric soil status:* No

**298413—Swartswood loam, 15 to 35 percent slopes,  
extremely stony**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,800 feet  
*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

### **Map Unit Composition**

Swartswood, extremely stony, and similar soils: 85 percent  
Dissimilar minor components: 15 percent

### **Description of Swartswood, Extremely Stony, Soil**

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landscape:* Till plains  
*Landform:* Ground moraines  
*Slope:* 15 to 35 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Very high  
*Parent material:* Coarse-loamy till derived from sandstone  
*Restrictive feature(s):* Fragipan at a depth of 20 to 36 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Low (about 5.6 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s  
*Hydric soil status:* No  
*Hydrologic soil group:* C

#### **Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material  
A—1 to 2 inches; loam  
E—2 to 3 inches; fine sandy loam  
Bhs—3 to 4 inches; gravelly fine sandy loam  
Bw—4 to 21 inches; gravelly fine sandy loam  
Bx1—21 to 32 inches; gravelly sandy loam  
Bx2—32 to 60 inches; gravelly sandy loam

### **Minor Components**

#### **Arnot, extremely stony**

*Percent of map unit:* 10 percent  
*Landform:* Ground moraines  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 15 to 35 percent

*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Hydric soil status:* No

**Lordstown, extremely stony**

*Percent of map unit:* 5 percent  
*Landform:* Ground moraines  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 15 to 35 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Hydric soil status:* No

**318498—Hazen-Hoosic complex, 3 to 8 percent slopes,  
very stony**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 400 to 800 feet  
*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

***Map Unit Composition***

Hazen, very stony, and similar soils: 60 percent  
Hoosic, very stony, and similar soils: 35 percent  
Dissimilar minor components: 5 percent

***Description of Hazen, Very Stony, Soil***

**Soil Classification**

Coarse-loamy, mixed, active, mesic Mollic Hapludalfs

**Setting**

*Landscape:* Outwash plains  
*Landform:* Valley trains  
*Slope:* 3 to 8 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Low  
*Parent material:* Coarse-loamy glaciofluvial deposits derived from limestone, sandstone, and shale  
*Restrictive feature(s):* None within a depth of 60 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.9 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 2e

*Hydric soil status:* No

*Hydrologic soil group:* B

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

Ap—1 to 10 inches; loam

Bt—10 to 18 inches; sandy loam

2C1—18 to 29 inches; very stony loamy coarse sand

2C2—29 to 41 inches; very gravelly coarse sand

2C3—41 to 60 inches; extremely gravelly coarse sand

***Description of Hoosic, Very Stony, Soil***

**Soil Classification**

Sandy-skeletal, mixed, mesic Humic Dystrudepts

**Setting**

*Landscape:* Outwash plains

*Landform:* Valley trains

*Slope:* 3 to 8 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very low

*Parent material:* Glaciofluvial deposits derived from sandstone and shale

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Somewhat excessively drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.5 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 3s

*Hydric soil status:* No

*Hydrologic soil group:* B

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

Ap—1 to 9 inches; gravelly loam

Bw—9 to 21 inches; very gravelly coarse sandy loam

2C1—21 to 27 inches; extremely gravelly loamy coarse sand

2C2—27 to 37 inches; extremely gravelly coarse sand

2C3—37 to 49 inches; extremely gravelly coarse sand

2C4—49 to 60 inches; extremely gravelly coarse sand

### ***Minor Components***

#### **Otisville, very stony**

*Percent of map unit:* 5 percent

*Landform:* Valley trains

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* No

### **318533—Hazen-Hoosic complex, 0 to 3 percent slopes, very stony**

#### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 800 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

#### ***Map Unit Composition***

Hazen, very stony, and similar soils: 50 percent

Hoosic, very stony, and similar soils: 40 percent

Dissimilar minor components: 10 percent

#### ***Description of Hazen, Very Stony, Soil***

##### **Soil Classification**

Coarse-loamy, mixed, active, mesic Mollic Hapludalfs

##### **Setting**

*Landscape:* Outwash plains

*Landform:* Valley trains

*Slope:* 0 to 3 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

##### **Properties and Qualities**

*Runoff:* Very low

*Parent material:* Coarse-loamy glaciofluvial deposits derived from limestone, sandstone, and shale

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.9 inches)



**Interpretive Groups**

*Land capability classification (nonirrigated):* 1

*Hydric soil status:* No

*Hydrologic soil group:* B

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

Ap—1 to 10 inches; loam

Bt—10 to 18 inches; sandy loam

2C1—18 to 29 inches; very stony loamy coarse sand

2C2—29 to 41 inches; very gravelly coarse sand

2C3—41 to 60 inches; extremely gravelly coarse sand

***Description of Hoosic, Very Stony, Soil***

**Soil Classification**

Sandy-skeletal, mixed, mesic Humic Dystrudepts

**Setting**

*Landscape:* Outwash plains

*Landform:* Valley trains

*Slope:* 0 to 3 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very low

*Parent material:* Glaciofluvial deposits derived from sandstone and shale

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Somewhat excessively drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.5 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 3s

*Hydric soil status:* No

*Hydrologic soil group:* B

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

Ap—1 to 9 inches; gravelly loam

Bw—9 to 21 inches; very gravelly coarse sandy loam

2C1—21 to 27 inches; extremely gravelly loamy coarse sand

2C2—27 to 37 inches; extremely gravelly coarse sand

2C3—37 to 49 inches; extremely gravelly coarse sand

2C4—49 to 60 inches; extremely gravelly coarse sand

***Minor Components***

**Hero, very stony**

*Percent of map unit:* 10 percent

*Landform:* Terraces  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 0 to 3 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil status:* No

## **319783—Catden mucky peat, 0 to 2 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 400 to 1,800 feet  
*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Catden and similar soils: 85 percent  
Dissimilar minor components: 15 percent

### ***Description of Catden Soil***

#### **Soil Classification**

Euic, mesic Typic Haplosaprists

#### **Setting**

*Landscape:* Till plains  
*Landform:* Depressions  
*Slope:* 0 to 3 percent  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Aquic

#### **Properties and Qualities**

*Runoff:* Very low  
*Parent material:* Herbaceous and/or woody organic material  
*Restrictive feature(s):* None within a depth of 60 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* Frequent  
*Depth to water table:* At the surface (perched)  
*Drainage class:* Very poorly drained  
*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Very high (about 26.8 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 5w  
*Hydric soil status:* Yes  
*Hydrologic soil group:* B/D

**Typical Profile**

Oe—0 to 2 inches; mucky peat  
Oa1—2 to 13 inches; muck  
Oa2—13 to 20 inches; woody muck  
Oa3—20 to 32 inches; muck  
Oa4—32 to 60 inches; muck

**Minor Components**

**Alden**

*Percent of map unit:* 13 percent  
*Landform:* Depressions  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 0 to 3 percent  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil status:* Yes

**Wallkill**

*Percent of map unit:* 2 percent  
*Landform:* Flood plains  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 0 to 3 percent  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear  
*Hydric soil status:* Yes

**319784—Fredon-Halsey complex, 0 to 3 percent slopes,  
very stony**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 400 to 800 feet  
*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

**Map Unit Composition**

Fredon, very stony, and similar soils: 50 percent  
Halsey, very stony, and similar soils: 40 percent  
Dissimilar minor components: 10 percent

**Description of Fredon, Very Stony, Soil**

**Soil Classification**

Coarse-loamy over sandy or sandy-skeletal, mixed, active, nonacid, mesic Aeric  
Endoaquepts

**Setting**

*Landscape:* Outwash plains  
*Landform:* Drainageways  
*Slope:* 0 to 3 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave

*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Aquic

**Properties and Qualities**

*Runoff:* Low  
*Parent material:* Coarse-loamy over sandy and gravelly glaciofluvial deposits derived from limestone, sandstone, and shale  
*Restrictive feature(s):* Strongly contrasting textural stratification at a depth of 22 to 40 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* About 6 to 18 inches (perched)  
*Drainage class:* Somewhat poorly drained  
*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Low (about 5.6 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 3w  
*Hydric soil status:* No  
*Hydrologic soil group:* D

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material  
A—1 to 8 inches; silt loam  
Bw1—8 to 14 inches; silt loam  
Bw2—14 to 18 inches; loam  
Bw3—18 to 23 inches; loam  
2C1—23 to 31 inches; extremely gravelly loamy coarse sand  
2C2—31 to 36 inches; extremely gravelly coarse sand  
2C3—36 to 45 inches; very gravelly coarse sand  
2C4—45 to 55 inches; extremely gravelly coarse sand  
2C5—55 to 60 inches; very gravelly coarse sand

***Description of Halsey, Very Stony, Soil***

**Soil Classification**

Coarse-loamy over sandy or sandy-skeletal, mixed, active, nonacid, mesic Typic Humaquepts

**Setting**

*Landscape:* Outwash plains  
*Landform:* Drainageways  
*Slope:* 0 to 3 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Concave  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Aquic

**Properties and Qualities**

*Runoff:* Low  
*Parent material:* Coarse-loamy over sandy and gravelly glaciofluvial deposits derived from limestone, sandstone, and shale  
*Restrictive feature(s):* Strongly contrasting textural stratification at a depth of 20 to 40 inches

*Frequency of flooding:* None  
*Frequency of ponding:* Frequent  
*Depth to water table:* At the surface (perched)  
*Drainage class:* Very poorly drained  
*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Low (about 5.7 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 5w  
*Hydric soil status:* Yes  
*Hydrologic soil group:* B/D

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material  
A1—1 to 5 inches; silt loam  
A2—5 to 11 inches; silt loam  
Bg—11 to 20 inches; silt loam  
2Cg1—20 to 25 inches; loamy sand  
2Cg2—25 to 35 inches; very gravelly coarse sand  
2Cg3—35 to 49 inches; very gravelly coarse sand  
2Cg4—49 to 56 inches; extremely gravelly coarse sand  
2Cg5—56 to 60 inches; extremely gravelly coarse sand

**Minor Components**

**Hero, very stony**

*Percent of map unit:* 10 percent  
*Landform:* Terraces  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 0 to 3 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil status:* No

**543222—Andover-Buchanan gravelly loams, 0 to 8 percent slopes, extremely stony**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 400 to 3,795 feet  
*Mean annual precipitation:* 34 to 55 inches  
*Mean annual air temperature:* 46 to 57 degrees F  
*Frost-free period:* 110 to 180 days

**Map Unit Composition**

Andover, extremely stony, and similar soils: 55 percent  
Buchanan, extremely stony, and similar soils: 40 percent  
Dissimilar minor components: 5 percent

**Description of Andover, Extremely Stony, Soil**

**Soil Classification**

Fine-loamy, mixed, active, mesic Typic Fragiaquults

**Setting**

*Landscape:* Colluvial valleys  
*Landform:* Sandstone and shale hillslopes  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Base slope  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Concave, linear  
*Across-slope shape:* Linear, concave  
*Aspect (representative):* South  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very high  
*Parent material:* Brown fine-loamy colluvium derived from sandstone and siltstone  
*Restrictive feature(s):* Fragipan at a depth of 16 to 28 inches; lithic bedrock at a depth of 72 to 99 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* At the surface to a depth of 6 inches (perched)  
*Drainage class:* Poorly drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Moderate (about 6.1 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s  
*Hydric soil status:* Yes  
*Hydrologic soil group:* D

**Typical Profile**

A—0 to 8 inches; gravelly loam  
Btg—8 to 17 inches; gravelly clay loam  
Btx—17 to 53 inches; gravelly clay loam  
C—53 to 65 inches; very gravelly loam

***Description of Buchanan, Extremely Stony, Soil***

**Soil Classification**

Fine-loamy, mixed, semiactive, mesic Aquic Fragiudults

**Setting**

*Landscape:* Colluvial valleys  
*Landform:* Sandstone and shale hillslopes  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Base slope  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Concave, linear  
*Across-slope shape:* Linear, concave  
*Aspect (representative):* South  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Medium  
*Parent material:* Colluvium derived from sandstone and shale

*Restrictive feature(s)*: Fragipan at a depth of 20 to 36 inches; lithic bedrock at a depth of 60 to 99 inches

*Frequency of flooding*: None

*Frequency of ponding*: None

*Depth to water table*: About 17 to 30 inches (perched)

*Drainage class*: Moderately well drained

*Shrink-swell potential*: Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage)*: 0

*Available water capacity*: Moderate (about 6.1 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated)*: 7s

*Hydric soil status*: No

*Hydrologic soil group*: C

#### **Vegetation**

*Existing plants*: Sedge, woodfern, New York fern, and lowbush blueberry

#### **Typical Profile**

Ap—0 to 6 inches; gravelly loam

Bt—6 to 23 inches; gravelly loam

Bx—23 to 47 inches; gravelly loam

C—47 to 61 inches; gravelly loam

### ***Minor Components***

#### **Laidig**

*Percent of map unit*: 3 percent

*Landform*: Sandstone, conglomerate, quartzite, and shale colluvial mountain slopes

*Geomorphic position (two-dimensional)*: Summit

*Geomorphic position (three-dimensional)*: Mountaintop

*Aspect (representative)*: Southeast

*Aspect (range)*: All aspects

*Slope*: 0 to 8 percent

*Down-slope shape*: Linear

*Across-slope shape*: Linear

*Hydric soil status*: No

#### **Hazleton**

*Percent of map unit*: 2 percent

*Landform*: Gray and red sandstone mountain slopes

*Geomorphic position (two-dimensional)*: Shoulder, backslope

*Geomorphic position (three-dimensional)*: Upper third of mountain flank

*Aspect (representative)*: South

*Aspect (range)*: All aspects

*Slope*: 0 to 8 percent

*Down-slope shape*: Convex, linear

*Across-slope shape*: Linear, convex

*Hydric soil status*: No

## **543243—Berks-Weikert complex, 25 to 60 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA)*: 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation*: 295 to 1,600 feet



*Mean annual precipitation:* 35 to 50 inches  
*Mean annual air temperature:* 45 to 57 degrees F  
*Frost-free period:* 120 to 214 days

### ***Map Unit Composition***

Berks and similar soils: 65 percent  
Weikert and similar soils: 25 percent  
Dissimilar minor components: 9 percent

### ***Description of Berks Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

#### **Setting**

*Landform:* Valleys and ridges  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Slope:* 25 to 60 percent  
*Down-slope shape:* Convex, linear  
*Across-slope shape:* Linear, convex  
*Aspect (representative):* South  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Medium  
*Parent material:* Acid brown residuum weathered from shale and siltstone  
*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 40 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Very low (about 2.6 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7e  
*Hydric soil status:* No  
*Hydrologic soil group:* C

#### **Typical Profile**

A—0 to 10 inches; channery loam  
Bw—10 to 26 inches; very channery silt loam  
C—26 to 33 inches; extremely channery loam  
R—33 to 43 inches; bedrock

### ***Description of Weikert Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts

#### **Setting**

*Landscape:* Valleys  
*Landform:* Shale hillslopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope

*Slope*: 25 to 60 percent  
*Down-slope shape*: Convex, linear  
*Across-slope shape*: Linear, convex  
*Aspect (representative)*: Southeast  
*Aspect (range)*: All aspects  
*Soil temperature regime*: Mesic  
*Soil moisture class*: Udic

#### **Properties and Qualities**

*Runoff*: Medium  
*Parent material*: Acid brown residuum weathered from shale and siltstone  
*Restrictive feature(s)*: Lithic bedrock at a depth of 10 to 20 inches  
*Frequency of flooding*: None  
*Frequency of ponding*: None  
*Depth to water table*: More than 72 inches  
*Drainage class*: Somewhat excessively drained  
*Shrink-swell potential*: Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage)*: 0  
*Available water capacity*: Very low (about 1.5 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated)*: 7e  
*Hydric soil status*: No  
*Hydrologic soil group*: C

#### **Typical Profile**

A—0 to 8 inches; channery silt loam  
Bw—8 to 15 inches; very channery silt loam  
C—15 to 18 inches; extremely channery silt loam  
R—18 to 20 inches; bedrock

### **Minor Components**

#### **Bedington**

*Percent of map unit*: 4 percent  
*Landform*: Shale hillslopes  
*Geomorphic position (two-dimensional)*: Summit  
*Geomorphic position (three-dimensional)*: Interfluve  
*Aspect (representative)*: South  
*Aspect (range)*: All aspects  
*Slope*: 8 to 15 percent  
*Down-slope shape*: Convex, linear  
*Across-slope shape*: Linear, convex  
*Hydric soil status*: No

#### **Comly**

*Percent of map unit*: 3 percent  
*Landform*: Shale hills  
*Geomorphic position (two-dimensional)*: Footslope  
*Geomorphic position (three-dimensional)*: Base slope  
*Aspect (representative)*: South  
*Aspect (range)*: All aspects  
*Slope*: 3 to 8 percent  
*Down-slope shape*: Concave, linear  
*Across-slope shape*: Linear, concave  
*Hydric soil status*: No

**Brinkerton**

*Percent of map unit:* 2 percent

*Landform:* Depressions

*Geomorphic position (two-dimensional):* Footslope

*Geomorphic position (three-dimensional):* Head slope

*Aspect (representative):* South

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* Yes

**543246—Buchanan gravelly loam, 3 to 8 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 3,795 feet

*Mean annual precipitation:* 34 to 60 inches

*Mean annual air temperature:* 46 to 59 degrees F

*Frost-free period:* 110 to 180 days

***Map Unit Composition***

Buchanan and similar soils: 75 percent

Dissimilar minor components: 25 percent

***Description of Buchanan Soil***

**Soil Classification**

Fine-loamy, mixed, semiactive, mesic Aquic Fragiudults

**Setting**

*Landform:* Valley sides and mountain slopes

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Lower third of mountain flank

*Slope:* 3 to 8 percent

*Down-slope shape:* Concave, linear

*Across-slope shape:* Linear, concave

*Aspect (representative):* South

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* High

*Parent material:* Colluvium derived from sandstone and shale

*Restrictive feature(s):* Fragipan at a depth of 20 to 36 inches; lithic bedrock at a depth of 60 to 99 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 14 to 30 inches (perched)

*Drainage class:* Moderately well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 6.4 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 2e

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

Ap—0 to 7 inches; gravelly loam

Bt—7 to 21 inches; gravelly loam

Btx—21 to 65 inches; cobbly clay loam

**Minor Components**

**Andover**

*Percent of map unit:* 10 percent

*Landform:* Depressions

*Geomorphic position (two-dimensional):* Footslope, toeslope

*Geomorphic position (three-dimensional):* Base slope

*Aspect (representative):* East

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* Yes

**Wharton**

*Percent of map unit:* 10 percent

*Landform:* Hills

*Geomorphic position (two-dimensional):* Backslope

*Geomorphic position (three-dimensional):* Head slope, side slope, interfluvium

*Aspect (representative):* South

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* No

**Laidig**

*Percent of map unit:* 5 percent

*Landform:* Mountains

*Geomorphic position (two-dimensional):* Footslope

*Geomorphic position (three-dimensional):* Lower third of mountain flank

*Aspect (representative):* East

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* No

**543247—Buchanan gravelly loam, 0 to 8 percent slopes,  
extremely stony**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 295 to 3,795 feet

*Mean annual precipitation:* 34 to 50 inches  
*Mean annual air temperature:* 46 to 59 degrees F  
*Frost-free period:* 101 to 180 days

### **Map Unit Composition**

Buchanan, extremely stony, and similar soils: 80 percent  
Dissimilar minor components: 20 percent

### **Description of Buchanan, Extremely Stony, Soil**

#### **Soil Classification**

Fine-loamy, mixed, semiactive, mesic Aquic Fragiudults

#### **Setting**

*Landform:* Valley sides and mountain slopes  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Lower third of mountain flank  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Concave, linear  
*Across-slope shape:* Linear, concave  
*Aspect (representative):* East  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Medium  
*Parent material:* Stony colluvium derived from sandstone and shale  
*Restrictive feature(s):* Fragipan at a depth of 20 to 36 inches; lithic bedrock at a depth of 60 to 99 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* About 14 to 30 inches (perched)  
*Drainage class:* Moderately well drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Moderate (about 6.3 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s  
*Hydric soil status:* No  
*Hydrologic soil group:* C

#### **Typical Profile**

A—0 to 3 inches; gravelly loam  
Bt—3 to 21 inches; gravelly loam  
Btx—21 to 65 inches; cobbly clay loam

### **Minor Components**

#### **Andover, extremely stony**

*Percent of map unit:* 5 percent  
*Landform:* Depressions  
*Geomorphic position (two-dimensional):* Footslope, toeslope  
*Geomorphic position (three-dimensional):* Base slope  
*Aspect (representative):* East  
*Aspect (range):* All aspects  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* Yes

**Cookport**

*Percent of map unit:* 5 percent

*Landform:* Broad ridges, plateaus

*Geomorphic position (two-dimensional):* Summit

*Geomorphic position (three-dimensional):* Upper third of mountain flank

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Down-slope shape:* Linear, concave

*Across-slope shape:* Concave

*Hydric soil status:* No

**Laidig**

*Percent of map unit:* 5 percent

*Landform:* Mountains

*Geomorphic position (two-dimensional):* Footslope

*Geomorphic position (three-dimensional):* Lower third of mountain flank

*Aspect (representative):* East

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* No

**Murrill**

*Percent of map unit:* 5 percent

*Landform:* Valley sides

*Geomorphic position (two-dimensional):* Footslope

*Geomorphic position (three-dimensional):* Base slope

*Aspect (representative):* South

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* No

## **543257—Chippewa silt loam, 0 to 3 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 800 to 1,800 feet

*Mean annual precipitation:* 30 to 46 inches

*Mean annual air temperature:* 45 to 50 degrees F

*Frost-free period:* 110 to 150 days

### ***Map Unit Composition***

Chippewa and similar soils: 90 percent

Dissimilar minor components: 10 percent

### ***Description of Chippewa Soil***

#### **Soil Classification**

Fine-loamy, mixed, active, mesic Typic Fragiaquepts

#### **Setting**

*Landscape:* Uplands

*Landform:* Depressions

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Interfluve

*Slope:* 0 to 3 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Very high

*Parent material:* Till derived from sedimentary rock

*Restrictive feature(s):* Fragipan at a depth of 8 to 20 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* At the surface to a depth of 2 inches (perched)

*Drainage class:* Poorly drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.0 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 4w

*Hydric soil status:* Yes

*Hydrologic soil group:* D

#### **Typical Profile**

Ap—0 to 8 inches; silt loam

Eg—8 to 16 inches; channery silt loam

Bxg—16 to 48 inches; channery loam

C—48 to 80 inches; channery loam

### ***Minor Components***

#### **Swartswood**

*Percent of map unit:* 5 percent

*Landform:* Hills

*Geomorphic position (two-dimensional):* Backslope, footslope

*Geomorphic position (three-dimensional):* Side slope

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Down-slope shape:* Convex, linear

*Across-slope shape:* Linear, convex

*Hydric soil status:* No

#### **Wurtsboro**

*Percent of map unit:* 5 percent

*Landform:* Hills



*Geomorphic position (two-dimensional):* Footslope  
*Geomorphic position (three-dimensional):* Base slope  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 3 to 8 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil status:* No

## **543258—Chippewa silt loam, 3 to 8 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 800 to 1,800 feet  
*Mean annual precipitation:* 30 to 46 inches  
*Mean annual air temperature:* 45 to 50 degrees F  
*Frost-free period:* 110 to 150 days

### ***Map Unit Composition***

Chippewa and similar soils: 90 percent  
Dissimilar minor components: 10 percent

### ***Description of Chippewa Soil***

#### **Soil Classification**

Fine-loamy, mixed, active, mesic Typic Fragiaquepts

#### **Setting**

*Landscape:* Uplands  
*Landform:* Depressions  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Interfluve  
*Slope:* 3 to 8 percent  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Very high  
*Parent material:* Till derived from sedimentary rock  
*Restrictive feature(s):* Fragipan at a depth of 8 to 20 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* At the surface to a depth of 2 inches (perched)  
*Drainage class:* Poorly drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Low (about 4.0 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 4w

*Hydric soil status:* Yes

*Hydrologic soil group:* D

**Typical Profile**

Ap—0 to 8 inches; silt loam

Eg—8 to 16 inches; channery silt loam

Bxg—16 to 48 inches; channery loam

C—48 to 80 inches; channery loam

***Minor Components***

**Swartswood**

*Percent of map unit:* 5 percent

*Landform:* Hills

*Geomorphic position (two-dimensional):* Backslope, footslope

*Geomorphic position (three-dimensional):* Side slope

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Down-slope shape:* Convex, linear

*Across-slope shape:* Linear, convex

*Hydric soil status:* No

**Wurtsboro**

*Percent of map unit:* 5 percent

*Landform:* Hills

*Geomorphic position (two-dimensional):* Footslope

*Geomorphic position (three-dimensional):* Base slope

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* No

**543259—Chippewa gravelly silt loam, 0 to 8 percent slopes, extremely stony**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 800 to 1,800 feet

*Mean annual precipitation:* 30 to 46 inches

*Mean annual air temperature:* 45 to 50 degrees F

*Frost-free period:* 110 to 150 days

***Map Unit Composition***

Chippewa, extremely stony, and similar soils: 90 percent

Dissimilar minor components: 10 percent

***Description of Chippewa, Extremely Stony, Soil***

**Soil Classification**

Fine-loamy, mixed, active, mesic Typic Fragiaquepts

### **Setting**

*Landscape:* Uplands  
*Landform:* Depressions  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Interfluve  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

### **Properties and Qualities**

*Runoff:* Very high  
*Parent material:* Till derived from sedimentary rock  
*Restrictive feature(s):* Fragipan at a depth of 8 to 20 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* At the surface to a depth of 2 inches (perched)  
*Drainage class:* Poorly drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Low (about 3.6 inches)

### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s  
*Hydric soil status:* Yes  
*Hydrologic soil group:* D

### **Typical Profile**

A—0 to 8 inches; gravelly silt loam  
Eg—8 to 16 inches; channery silt loam  
Bxg—16 to 48 inches; channery loam  
C—48 to 80 inches; channery loam

## **Minor Components**

### **Swartswood**

*Percent of map unit:* 5 percent  
*Landform:* Hills  
*Geomorphic position (two-dimensional):* Backslope, footslope  
*Geomorphic position (three-dimensional):* Side slope  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 3 to 8 percent  
*Down-slope shape:* Convex, linear  
*Across-slope shape:* Linear, convex  
*Hydric soil status:* No

### **Wurtsboro**

*Percent of map unit:* 5 percent  
*Landform:* Hills  
*Geomorphic position (two-dimensional):* Footslope  
*Geomorphic position (three-dimensional):* Base slope  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 3 to 8 percent

*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil status:* No

## **543271—Delaware fine sandy loam, 0 to 3 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 0.0 to 909 feet  
*Mean annual precipitation:* 28 to 50 inches  
*Mean annual air temperature:* 45 to 57 degrees F  
*Frost-free period:* 110 to 210 days

### ***Map Unit Composition***

Delaware and similar soils: 90 percent  
Dissimilar minor components: 9 percent

### ***Description of Delaware Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Dystrudepts

#### **Setting**

*Landscape:* River valleys  
*Landform:* Low to middle river terraces  
*Landform position (two-dimensional):* Backslope, footslope  
*Landform position (three-dimensional):* Tread  
*Slope:* 0 to 3 percent  
*Down-slope shape:* Linear, convex  
*Across-slope shape:* Linear, convex  
*Aspect (representative):* South  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Very low  
*Parent material:* Postglacial alluvium derived from sandstone and shale  
*Restrictive feature(s):* Lithic bedrock at a depth of 72 to 99 inches  
*Frequency of flooding:* Rare  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* High (about 9.3 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 1  
*Hydric soil status:* No  
*Hydrologic soil group:* B

#### **Typical Profile**

Ap—0 to 10 inches; fine sandy loam  
Bw—10 to 40 inches; very fine sandy loam  
C—40 to 87 inches; loamy fine sand

### **Minor Components**

#### **Alton**

*Percent of map unit:* 5 percent  
*Landform:* Terraces and alluvial fans  
*Geomorphic position (two-dimensional):* Toeslope  
*Geomorphic position (three-dimensional):* Tread  
*Aspect (representative):* South  
*Aspect (range):* All aspects  
*Slope:* 0 to 3 percent  
*Down-slope shape:* Linear, convex  
*Across-slope shape:* Linear, convex  
*Hydric soil status:* No

#### **Conotton**

*Percent of map unit:* 2 percent  
*Landform:* Stream terraces  
*Geomorphic position (two-dimensional):* Toeslope  
*Geomorphic position (three-dimensional):* Riser, tread  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 0 to 3 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil status:* No

#### **Hatboro**

*Percent of map unit:* 1 percent  
*Landform:* Flood plains  
*Geomorphic position (two-dimensional):* Toeslope  
*Geomorphic position (three-dimensional):* Tread  
*Aspect (representative):* South  
*Aspect (range):* All aspects  
*Slope:* 0 to 3 percent  
*Down-slope shape:* Linear, concave  
*Across-slope shape:* Linear, concave  
*Hydric soil status:* Yes

#### **Nanticoke**

*Percent of map unit:* 1 percent  
*Landform:* Tidal flats  
*Geomorphic position (two-dimensional):* Footslope  
*Geomorphic position (three-dimensional):* Talf  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 0 to 1 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil status:* Yes

## **543276—Fluvaquents**

### **Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 0.0 to 1,601 feet  
*Mean annual precipitation:* 34 to 50 inches  
*Mean annual air temperature:* 46 to 57 degrees F  
*Frost-free period:* 130 to 210 days

### **Map Unit Composition**

Fluvaquents and similar soils: 85 percent  
Dissimilar minor components: 8 percent

### **Description of Fluvaquents**

#### **Soil Classification**

Fluvaquents

#### **Setting**

*Landform:* Flood plains  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Rise  
*Slope:* 0 to 2 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* South  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Very high  
*Parent material:* Alluvium derived from sedimentary rock  
*Restrictive feature(s):* Lithic bedrock at a depth of 72 to 99 inches  
*Frequency of flooding:* Frequent  
*Frequency of ponding:* None  
*Depth to water table:* At the surface to a depth of 6 inches  
*Drainage class:* Poorly drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Moderate (about 6.3 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 5w  
*Hydric soil status:* Yes  
*Hydrologic soil group:* D

#### **Vegetation**

*Existing plants:* Red maple, sedge, silky dogwood, green ash, northern spicebush, and skunk cabbage

#### **Typical Profile**

A—0 to 6 inches; silt loam  
C—6 to 62 inches; clay

### **Minor Components**

#### **Towhee**

*Percent of map unit:* 5 percent  
*Landform:* Depressions  
*Geomorphic position (two-dimensional):* Footslope, toeslope  
*Geomorphic position (three-dimensional):* Head slope, side slope

*Aspect (representative):* South  
*Aspect (range):* All aspects  
*Slope:* 0 to 3 percent  
*Down-slope shape:* Linear, concave  
*Across-slope shape:* Concave  
*Hydric soil status:* Yes

**Mount Lucas**

*Percent of map unit:* 1 percent  
*Landform:* Nearly level to moderately steep hillslopes  
*Geomorphic position (two-dimensional):* Backslope, footslope  
*Geomorphic position (three-dimensional):* Side slope  
*Aspect (representative):* South  
*Aspect (range):* All aspects  
*Slope:* 0 to 3 percent  
*Down-slope shape:* Linear, concave  
*Across-slope shape:* Linear, concave  
*Hydric soil status:* No

**Nanticoke**

*Percent of map unit:* 1 percent  
*Landform:* Tidal flats  
*Geomorphic position (two-dimensional):* Footslope  
*Geomorphic position (three-dimensional):* Talf  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 0 to 1 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil status:* Yes

**Neshaminy**

*Percent of map unit:* 1 percent  
*Landform:* Hillslopes  
*Geomorphic position (two-dimensional):* Summit, shoulder, backslope  
*Geomorphic position (three-dimensional):* Nose slope, side slope, interfluvium  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 3 to 8 percent  
*Down-slope shape:* Linear, convex  
*Across-slope shape:* Linear, convex  
*Hydric soil status:* No

**543292—Hazleton very channery loam, 8 to 25 percent slopes, extremely stony**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 600 to 2,495 feet  
*Mean annual precipitation:* 36 to 55 inches  
*Mean annual air temperature:* 46 to 57 degrees F  
*Frost-free period:* 110 to 180 days



### **Map Unit Composition**

Hazleton, extremely stony, and similar soils: 90 percent

Dissimilar minor components: 5 percent

### **Description of Hazleton, Extremely Stony, Soil**

#### **Soil Classification**

Loamy-skeletal, siliceous, active, mesic Typic Dystrudepts

#### **Setting**

*Landscape:* Mountains

*Landform:* Gray and red sandstone mountain slopes

*Landform position (two-dimensional):* Shoulder, backslope

*Landform position (three-dimensional):* Upper third of mountain flank

*Slope:* 8 to 25 percent

*Down-slope shape:* Convex, linear

*Across-slope shape:* Linear, convex

*Aspect (representative):* South

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Low

*Parent material:* Loamy residuum weathered from sandstone

*Restrictive feature(s):* Lithic bedrock at a depth of 40 to 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 5.6 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* B

#### **Typical Profile**

A—0 to 6 inches; very channery loam

Bw—6 to 43 inches; very channery loam

C—43 to 55 inches; extremely channery loam

R—55 to 80 inches; bedrock

### **Minor Components**

#### **Buchanan**

*Percent of map unit:* 5 percent

*Landform:* Sandstone and shale hillslopes

*Geomorphic position (two-dimensional):* Footslope

*Geomorphic position (three-dimensional):* Base slope

*Aspect (representative):* South

*Aspect (range):* All aspects

*Slope:* 8 to 25 percent

*Down-slope shape:* Concave, linear

*Across-slope shape:* Linear, concave

*Hydric soil status:* No

## **543293—Hazleton very channery loam, 25 to 60 percent slopes, extremely stony**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 600 to 2,495 feet

*Mean annual precipitation:* 36 to 55 inches

*Mean annual air temperature:* 46 to 57 degrees F

*Frost-free period:* 110 to 180 days

### ***Map Unit Composition***

Hazleton, extremely stony, and similar soils: 90 percent

Dissimilar minor components: 5 percent

### ***Description of Hazleton, Extremely Stony, Soil***

#### **Soil Classification**

Loamy-skeletal, siliceous, active, mesic Typic Dystrudepts

#### **Setting**

*Landscape:* Mountains

*Landform:* Gray and red sandstone mountain slopes

*Landform position (two-dimensional):* Shoulder, backslope

*Landform position (three-dimensional):* Upper third of mountain flank

*Slope:* 25 to 60 percent

*Down-slope shape:* Convex, linear

*Across-slope shape:* Linear, convex

*Aspect (representative):* South

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Medium

*Parent material:* Loamy residuum weathered from sandstone

*Restrictive feature(s):* Lithic bedrock at a depth of 40 to 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 6.0 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* B

#### **Typical Profile**

A—0 to 6 inches; very channery loam

Bw—6 to 43 inches; very channery loam

C—43 to 60 inches; extremely channery loam

R—60 to 80 inches; bedrock

### ***Minor Components***

#### **Buchanan**

*Percent of map unit:* 5 percent  
*Landform:* Sandstone and shale hillslopes  
*Geomorphic position (two-dimensional):* Footslope  
*Geomorphic position (three-dimensional):* Base slope  
*Aspect (representative):* South  
*Aspect (range):* All aspects  
*Slope:* 8 to 25 percent  
*Down-slope shape:* Concave, linear  
*Across-slope shape:* Linear, concave  
*Hydric soil status:* No

### **543299—Laidig very gravelly loam, 0 to 8 percent slopes, extremely stony**

#### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 400 to 3,795 feet  
*Mean annual precipitation:* 34 to 55 inches  
*Mean annual air temperature:* 46 to 59 degrees F  
*Frost-free period:* 110 to 180 days

#### ***Map Unit Composition***

Laidig, extremely stony, and similar soils: 90 percent  
Dissimilar minor components: 10 percent

#### ***Description of Laidig, Extremely Stony, Soil***

##### **Soil Classification**

Fine-loamy, siliceous, active, mesic Typic Fragiudults

##### **Setting**

*Landscape:* Mountains  
*Landform:* Sandstone, conglomerate, quartzite, and shale colluvial mountain slopes  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Mountaintop  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

##### **Properties and Qualities**

*Runoff:* Low  
*Parent material:* Brown fine-loamy colluvium derived from sandstone and siltstone  
*Restrictive feature(s):* Fragipan at a depth of 30 to 50 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* About 30 to 48 inches (perched)  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 5.7 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

A—0 to 3 inches; very gravelly loam

Bt—3 to 38 inches; gravelly loam

Bx—38 to 62 inches; very channery loam

**Minor Components**

**Andover**

*Percent of map unit:* 4 percent

*Landform:* Sandstone and shale hillslopes

*Geomorphic position (two-dimensional):* Footslope

*Geomorphic position (three-dimensional):* Base slope

*Aspect (representative):* South

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Down-slope shape:* Concave, linear

*Across-slope shape:* Linear, concave

*Hydric soil status:* Yes

**Buchanan**

*Percent of map unit:* 4 percent

*Landform:* Sandstone and shale hillslopes

*Geomorphic position (two-dimensional):* Footslope

*Geomorphic position (three-dimensional):* Base slope

*Aspect (representative):* South

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Down-slope shape:* Concave, linear

*Across-slope shape:* Linear, concave

*Hydric soil status:* No

**Hazleton**

*Percent of map unit:* 2 percent

*Landform:* Gray and red sandstone mountain slopes

*Geomorphic position (two-dimensional):* Shoulder, backslope

*Geomorphic position (three-dimensional):* Upper third of mountain flank

*Aspect (representative):* South

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Down-slope shape:* Convex, linear

*Across-slope shape:* Linear, convex

*Hydric soil status:* No

**543300—Laidig very gravelly loam, 8 to 25 percent slopes, extremely stony**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 3,795 feet  
*Mean annual precipitation:* 34 to 55 inches  
*Mean annual air temperature:* 46 to 57 degrees F  
*Frost-free period:* 110 to 180 days

### **Map Unit Composition**

Laidig, extremely stony, and similar soils: 90 percent  
Dissimilar minor components: 10 percent

### **Description of Laidig, Extremely Stony, Soil**

#### **Soil Classification**

Fine-loamy, siliceous, active, mesic Typic Fragiudults

#### **Setting**

*Landscape:* Mountains  
*Landform:* Sandstone, conglomerate, quartzite, and shale colluvial mountain slopes  
*Landform position (two-dimensional):* Shoulder  
*Landform position (three-dimensional):* Upper third of mountain flank  
*Slope:* 8 to 25 percent  
*Down-slope shape:* Linear, convex  
*Across-slope shape:* Linear, convex  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Medium  
*Parent material:* Brown fine-loamy colluvium derived from sandstone and siltstone  
*Restrictive feature(s):* Fragipan at a depth of 30 to 50 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* About 30 to 48 inches (perched)  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Low (about 5.7 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s  
*Hydric soil status:* No  
*Hydrologic soil group:* C

#### **Typical Profile**

A—0 to 3 inches; very gravelly loam  
Bt—3 to 38 inches; gravelly loam  
Bx—38 to 62 inches; very channery loam

### **Minor Components**

#### **Andover, extremely stony**

*Percent of map unit:* 4 percent  
*Landform:* Sandstone and shale hillslopes  
*Geomorphic position (two-dimensional):* Footslope  
*Geomorphic position (three-dimensional):* Base slope  
*Aspect (representative):* South  
*Aspect (range):* All aspects

*Slope:* 0 to 8 percent  
*Down-slope shape:* Concave, linear  
*Across-slope shape:* Linear, concave  
*Hydric soil status:* Yes

**Buchanan**

*Percent of map unit:* 4 percent  
*Landform:* Sandstone and shale hillslopes  
*Geomorphic position (two-dimensional):* Footslope  
*Geomorphic position (three-dimensional):* Base slope  
*Aspect (representative):* South  
*Aspect (range):* All aspects  
*Slope:* 8 to 25 percent  
*Down-slope shape:* Concave, linear  
*Across-slope shape:* Linear, concave  
*Hydric soil status:* No

**Hazleton**

*Percent of map unit:* 2 percent  
*Landform:* Gray and red sandstone mountain slopes  
*Geomorphic position (two-dimensional):* Shoulder, backslope  
*Geomorphic position (three-dimensional):* Upper third of mountain flank  
*Aspect (representative):* South  
*Aspect (range):* All aspects  
*Slope:* 8 to 25 percent  
*Down-slope shape:* Convex, linear  
*Across-slope shape:* Linear, convex  
*Hydric soil status:* No

**543304—Laidig-Rubble land complex, 25 to 60 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 400 to 3,795 feet  
*Mean annual precipitation:* 34 to 50 inches  
*Mean annual air temperature:* 45 to 57 degrees F  
*Frost-free period:* 120 to 180 days

***Map Unit Composition***

Laidig and similar soils: 50 percent  
Rubble land: 40 percent  
Dissimilar minor components: 10 percent

***Description of Laidig Soil***

**Soil Classification**

Fine-loamy, siliceous, active, mesic Typic Fragiudults

**Setting**

*Landscape:* Mountains  
*Landform:* Sandstone, conglomerate, quartzite, and shale colluvial mountain slopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Upper third of mountain flank  
*Slope:* 25 to 60 percent

*Down-slope shape:* Linear, convex  
*Across-slope shape:* Linear, convex  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* High  
*Parent material:* Brown fine-loamy colluvium derived from sandstone and siltstone  
*Restrictive feature(s):* Fragipan at a depth of 30 to 50 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* About 30 to 48 inches (perched)  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Low (about 5.7 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s  
*Hydric soil status:* No  
*Hydrologic soil group:* C

**Typical Profile**

A—0 to 3 inches; very gravelly loam  
Bt—3 to 38 inches; gravelly loam  
Bx—38 to 62 inches; very channery loam

***Description of Rubble Land***

**Setting**

*Landscape:* Mountains  
*Landform:* Sandstone, conglomerate, quartzite, and shale colluvial mountain slopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Upper third of mountain flank  
*Slope:* 25 to 60 percent  
*Down-slope shape:* Linear, convex  
*Across-slope shape:* Linear, convex  
*Aspect (representative):* East  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Low  
*Parent material:* Stones and boulder fields of sandstone  
*Restrictive feature(s):* Lithic bedrock at a depth of 40 to 72 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Excessively drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Very low (about 3.0 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 8s



*Hydric soil status:* No  
*Hydrologic soil group:* A

**Typical Profile**

C—0 to 60 inches; fragmental material

***Minor Components***

**Andover**

*Percent of map unit:* 5 percent  
*Landform:* Sandstone and shale hillslopes  
*Geomorphic position (two-dimensional):* Footslope  
*Geomorphic position (three-dimensional):* Base slope  
*Aspect (representative):* South  
*Aspect (range):* All aspects  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Concave, linear  
*Across-slope shape:* Linear, concave  
*Hydric soil status:* Yes

**Buchanan**

*Percent of map unit:* 5 percent  
*Landform:* Sandstone and shale hillslopes  
*Geomorphic position (two-dimensional):* Footslope  
*Geomorphic position (three-dimensional):* Base slope  
*Aspect (representative):* South  
*Aspect (range):* All aspects  
*Slope:* 8 to 25 percent  
*Down-slope shape:* Concave, linear  
*Across-slope shape:* Linear, concave  
*Hydric soil status:* No

**543318—Rubble land**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 400 to 3,795 feet  
*Mean annual precipitation:* 34 to 55 inches  
*Mean annual air temperature:* 45 to 57 degrees F  
*Frost-free period:* 110 to 175 days

***Map Unit Composition***

Rubble land: 75 percent  
Dissimilar minor components: 25 percent

***Description of Rubble Land***

**Setting**

*Landform:* Mountain slopes  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Mountain flank  
*Slope:* 0 to 90 percent  
*Down-slope shape:* Linear, convex  
*Across-slope shape:* Linear, convex

*Aspect (representative):* East  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Low  
*Parent material:* Stones and boulder fields of sandstone  
*Restrictive feature(s):* Lithic bedrock at a depth of 40 to 72 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Excessively drained  
*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Very low (about 3.0 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 8s  
*Hydric soil status:* No  
*Hydrologic soil group:* A

**Typical Profile**

C—0 to 60 inches; fragmental material

***Minor Components***

**Hazleton**

*Percent of map unit:* 10 percent  
*Landform:* Mountains and mountain slopes  
*Geomorphic position (two-dimensional):* Summit, backslope  
*Geomorphic position (three-dimensional):* Upper third of mountain flank, mountaintop, and mountain flank  
*Aspect (representative):* East  
*Aspect (range):* All aspects  
*Slope:* 3 to 8 percent  
*Down-slope shape:* Linear, convex  
*Across-slope shape:* Linear, convex  
*Hydric soil status:* No

**Buchanan**

*Percent of map unit:* 5 percent  
*Landform:* Valley sides and mountain slopes  
*Geomorphic position (two-dimensional):* Footslope  
*Geomorphic position (three-dimensional):* Lower third of mountain flank  
*Aspect (representative):* East  
*Aspect (range):* All aspects  
*Slope:* 8 to 25 percent  
*Down-slope shape:* Concave, linear  
*Across-slope shape:* Linear, concave  
*Hydric soil status:* No

**Clymer**

*Percent of map unit:* 5 percent  
*Landform:* Hills  
*Geomorphic position (two-dimensional):* Shoulder, backslope  
*Geomorphic position (three-dimensional):* Side slope

*Aspect (representative):* East  
*Aspect (range):* All aspects  
*Slope:* 3 to 8 percent  
*Down-slope shape:* Convex, linear  
*Across-slope shape:* Linear, convex  
*Hydric soil status:* No

**Laidig**

*Percent of map unit:* 5 percent  
*Landform:* Mountains  
*Geomorphic position (two-dimensional):* Footslope  
*Geomorphic position (three-dimensional):* Lower third of mountain flank  
*Aspect (representative):* East  
*Aspect (range):* All aspects  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil status:* No

**543327—Swartswood gravelly loam, 3 to 8 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 200 to 1,800 feet  
*Mean annual precipitation:* 30 to 50 inches  
*Mean annual air temperature:* 45 to 54 degrees F  
*Frost-free period:* 110 to 200 days

***Map Unit Composition***

Swartswood and similar soils: 90 percent  
Dissimilar minor components: 10 percent

***Description of Swartswood Soil***

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

**Setting**

*Landscape:* Uplands  
*Landform:* Hills  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Slope:* 3 to 8 percent  
*Down-slope shape:* Convex, linear  
*Across-slope shape:* Linear, convex  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Medium  
*Parent material:* Glacial till derived from quartzite, conglomerate, and/or sandstone

*Restrictive feature(s)*: Fragipan at a depth of 20 to 36 inches  
*Frequency of flooding*: None  
*Frequency of ponding*: None  
*Depth to water table*: About 33 to 36 inches (perched)  
*Drainage class*: Well drained  
*Shrink-swell potential*: Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage)*: 0  
*Available water capacity*: Low (about 4.4 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated)*: 2e  
*Hydric soil status*: No  
*Hydrologic soil group*: C

**Typical Profile**

Ap—0 to 11 inches; gravelly loam  
Bw—11 to 34 inches; channery loam  
Bx—34 to 47 inches; very gravelly fine sandy loam

**Minor Components**

**Conotton**

*Percent of map unit*: 4 percent  
*Landform*: Stream terraces  
*Geomorphic position (two-dimensional)*: Toeslope  
*Geomorphic position (three-dimensional)*: Riser, tread  
*Aspect (representative)*: Southeast  
*Aspect (range)*: All aspects  
*Slope*: 3 to 8 percent  
*Down-slope shape*: Linear  
*Across-slope shape*: Linear  
*Hydric soil status*: No

**Chippewa**

*Percent of map unit*: 3 percent  
*Landform*: Depressions  
*Geomorphic position (two-dimensional)*: Toeslope  
*Geomorphic position (three-dimensional)*: Interfluve  
*Aspect (representative)*: Southeast  
*Aspect (range)*: All aspects  
*Slope*: 3 to 8 percent  
*Down-slope shape*: Concave  
*Across-slope shape*: Concave  
*Hydric soil status*: Yes

**Manlius**

*Percent of map unit*: 3 percent  
*Landform*: Valley sides  
*Geomorphic position (two-dimensional)*: Summit  
*Geomorphic position (three-dimensional)*: Side slope, interfluve  
*Aspect (representative)*: Southeast  
*Aspect (range)*: All aspects  
*Slope*: 3 to 8 percent  
*Down-slope shape*: Convex, linear  
*Across-slope shape*: Linear, convex  
*Hydric soil status*: No

## **543328—Swartswood gravelly loam, 8 to 15 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 200 to 1,800 feet

*Mean annual precipitation:* 30 to 50 inches

*Mean annual air temperature:* 45 to 54 degrees F

*Frost-free period:* 110 to 200 days

### ***Map Unit Composition***

Swartswood and similar soils: 90 percent

Dissimilar minor components: 10 percent

### ***Description of Swartswood Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landscape:* Uplands

*Landform:* Hills

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Slope:* 8 to 15 percent

*Down-slope shape:* Convex, linear

*Across-slope shape:* Linear, convex

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Medium

*Parent material:* Glacial till derived from quartzite, conglomerate, and/or sandstone

*Restrictive feature(s):* Fragipan at a depth of 20 to 36 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 33 to 36 inches (perched)

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.4 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 3e

*Hydric soil status:* No

*Hydrologic soil group:* C

#### **Typical Profile**

Ap—0 to 11 inches; gravelly loam

Bw—11 to 34 inches; channery loam

Bx—34 to 47 inches; very gravelly fine sandy loam

### ***Minor Components***

#### **Conotton**

*Percent of map unit:* 4 percent

*Landform*: Stream terraces  
*Geomorphic position (two-dimensional)*: Toeslope  
*Geomorphic position (three-dimensional)*: Riser, tread  
*Aspect (representative)*: Southeast  
*Aspect (range)*: All aspects  
*Slope*: 8 to 15 percent  
*Down-slope shape*: Linear  
*Across-slope shape*: Linear  
*Hydric soil status*: No

**Chippewa**

*Percent of map unit*: 3 percent  
*Landform*: Depressions  
*Geomorphic position (two-dimensional)*: Toeslope  
*Geomorphic position (three-dimensional)*: Interfluvium  
*Aspect (representative)*: Southeast  
*Aspect (range)*: All aspects  
*Slope*: 3 to 8 percent  
*Down-slope shape*: Concave  
*Across-slope shape*: Concave  
*Hydric soil status*: Yes

**Manlius**

*Percent of map unit*: 3 percent  
*Landform*: Valley sides  
*Geomorphic position (two-dimensional)*: Shoulder  
*Geomorphic position (three-dimensional)*: Side slope  
*Aspect (representative)*: Southeast  
*Aspect (range)*: All aspects  
*Slope*: 8 to 15 percent  
*Down-slope shape*: Convex, linear  
*Across-slope shape*: Linear, convex  
*Hydric soil status*: No

**543330—Swartswood and Wurtsboro soils, 0 to 8 percent slopes, extremely stony**

***Map Unit Setting***

*Major land resource area (MLRA)*: 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation*: 200 to 1,800 feet  
*Mean annual precipitation*: 30 to 50 inches  
*Mean annual air temperature*: 45 to 54 degrees F  
*Frost-free period*: 110 to 200 days

***Map Unit Composition***

Swartswood, extremely stony, and similar soils: 50 percent  
Wurtsboro, extremely stony, and similar soils: 30 percent  
Dissimilar minor components: 11 percent

***Description of Swartswood, Extremely Stony, Soil***

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

**Setting**

*Landscape:* Uplands

*Landform:* Hills

*Landform position (two-dimensional):* Backslope, footslope

*Landform position (three-dimensional):* Side slope

*Slope:* 0 to 8 percent

*Down-slope shape:* Convex, linear

*Across-slope shape:* Linear, convex

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Low

*Parent material:* Glacial till derived from quartzite, conglomerate, and/or sandstone

*Restrictive feature(s):* Fragipan at a depth of 20 to 36 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 33 to 36 inches (perched)

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.4 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

Ap—0 to 11 inches; gravelly loam

Bw—11 to 34 inches; channery loam

Bx—34 to 47 inches; very gravelly fine sandy loam

***Description of Wurtsboro, Extremely Stony, Soil***

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

**Setting**

*Landscape:* Glaciated uplands

*Landform:* Hills

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Base slope

*Slope:* 0 to 8 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Medium

*Parent material:* Glacial till derived from quartzite, conglomerate, and/or sandstone

*Restrictive feature(s):* Fragipan at a depth of 17 to 28 inches; lithic bedrock at a depth of 60 to 120 inches



*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* About 12 to 30 inches (perched)  
*Drainage class:* Moderately well drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Moderate (about 6.9 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s  
*Hydric soil status:* No  
*Hydrologic soil group:* C

#### **Typical Profile**

A—0 to 10 inches; gravelly loam  
Bw—10 to 20 inches; gravelly loam  
Bx—20 to 64 inches; very gravelly loam

### ***Minor Components***

#### **Conotton**

*Percent of map unit:* 4 percent  
*Landform:* Stream terraces  
*Geomorphic position (two-dimensional):* Toeslope  
*Geomorphic position (three-dimensional):* Riser, tread  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 3 to 8 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil status:* No

#### **Manlius**

*Percent of map unit:* 4 percent  
*Landform:* Valley sides  
*Geomorphic position (two-dimensional):* Summit  
*Geomorphic position (three-dimensional):* Side slope, interfluvium  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 3 to 8 percent  
*Down-slope shape:* Convex, linear  
*Across-slope shape:* Linear, convex  
*Hydric soil status:* No

#### **Chippewa, extremely stony**

*Percent of map unit:* 3 percent  
*Landform:* Depressions  
*Geomorphic position (two-dimensional):* Toeslope  
*Geomorphic position (three-dimensional):* Interfluvium  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil status:* Yes

## **543331—Swartswood and Wurtsboro soils, 8 to 25 percent slopes, extremely stony**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 620 to 1,800 feet

*Mean annual precipitation:* 30 to 46 inches

*Mean annual air temperature:* 45 to 54 degrees F

*Frost-free period:* 110 to 193 days

### ***Map Unit Composition***

Swartswood, extremely stony, and similar soils: 50 percent

Wurtsboro, extremely stony, and similar soils: 30 percent

Dissimilar minor components: 7 percent

### ***Description of Swartswood, Extremely Stony, Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landscape:* Uplands

*Landform:* Hills

*Landform position (two-dimensional):* Backslope, footslope

*Landform position (three-dimensional):* Side slope

*Slope:* 8 to 25 percent

*Down-slope shape:* Convex, linear

*Across-slope shape:* Linear, convex

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Medium

*Parent material:* Glacial till derived from quartzite, conglomerate, and/or sandstone

*Restrictive feature(s):* Fragipan at a depth of 20 to 36 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 33 to 36 inches (perched)

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.4 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

#### **Typical Profile**

Ap—0 to 11 inches; gravelly loam

Bw—11 to 34 inches; channery loam

Bx—34 to 47 inches; very gravelly fine sandy loam

### ***Description of Wurtsboro, Extremely Stony, Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landscape:* Glaciated uplands

*Landform:* Hills

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Base slope

*Slope:* 8 to 25 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* High

*Parent material:* Glacial till derived from quartzite, conglomerate, and/or sandstone

*Restrictive feature(s):* Fragipan at a depth of 17 to 28 inches; lithic bedrock at a depth of 60 to 120 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 12 to 30 inches (perched)

*Drainage class:* Moderately well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 6.9 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

#### **Typical Profile**

A—0 to 10 inches; gravelly loam

Bw—10 to 20 inches; gravelly loam

Bx—20 to 64 inches; very gravelly loam

### ***Minor Components***

#### **Conotton**

*Percent of map unit:* 4 percent

*Landform:* Stream terraces

*Geomorphic position (two-dimensional):* Toeslope

*Geomorphic position (three-dimensional):* Riser, tread

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 15 to 25 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* No

#### **Chippewa, extremely stony**

*Percent of map unit:* 3 percent

*Landform:* Depressions

*Geomorphic position (two-dimensional):* Toeslope  
*Geomorphic position (three-dimensional):* Interfluve  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil status:* Yes

## **543359—Volusia gravelly silt loam, 3 to 8 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 800 to 1,800 feet  
*Mean annual precipitation:* 30 to 46 inches  
*Mean annual air temperature:* 45 to 50 degrees F  
*Frost-free period:* 110 to 150 days

### ***Map Unit Composition***

Volusia and similar soils: 85 percent  
Dissimilar minor components: 15 percent

### ***Description of Volusia Soil***

#### **Soil Classification**

Fine-loamy, mixed, active, mesic Aeric Fragiagquepts

#### **Setting**

*Landscape:* Plateaus  
*Landform:* Valley sides  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Side slope  
*Slope:* 3 to 8 percent  
*Down-slope shape:* Concave, linear  
*Across-slope shape:* Linear, concave  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Very high  
*Parent material:* Fine-loamy basal till derived from sandstone and siltstone  
*Restrictive feature(s):* Fragipan at a depth of 10 to 22 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* About 6 to 18 inches (perched)  
*Drainage class:* Somewhat poorly drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Low (about 3.2 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 3w

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

A—0 to 8 inches; gravelly silt loam

Bw—8 to 15 inches; channery loam

Bx—15 to 70 inches; channery loam

C—70 to 80 inches; very channery loam

***Minor Components***

**Chippewa**

*Percent of map unit:* 10 percent

*Landform:* Depressions

*Geomorphic position (two-dimensional):* Toeslope

*Geomorphic position (three-dimensional):* Interfluve

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* Yes

**Swartswood**

*Percent of map unit:* 5 percent

*Landform:* Hills

*Geomorphic position (two-dimensional):* Backslope, footslope

*Geomorphic position (three-dimensional):* Side slope

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Down-slope shape:* Convex, linear

*Across-slope shape:* Linear, convex

*Hydric soil status:* No

**543360—Volusia gravelly silt loam, 0 to 8 percent slopes,  
extremely stony**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 800 to 1,800 feet

*Mean annual precipitation:* 30 to 46 inches

*Mean annual air temperature:* 45 to 50 degrees F

*Frost-free period:* 110 to 150 days

***Map Unit Composition***

Volusia, extremely stony, and similar soils: 85 percent

Dissimilar minor components: 15 percent

***Description of Volusia, Extremely Stony, Soil***

**Soil Classification**

Fine-loamy, mixed, active, mesic Aeric Fragiaquepts

### **Setting**

*Landscape:* Plateaus  
*Landform:* Valley sides  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Side slope  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Concave, linear  
*Across-slope shape:* Linear, concave  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

### **Properties and Qualities**

*Runoff:* Very high  
*Parent material:* Fine-loamy basal till derived from sandstone and siltstone  
*Restrictive feature(s):* Fragipan at a depth of 10 to 22 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* About 6 to 18 inches (perched)  
*Drainage class:* Somewhat poorly drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Low (about 3.3 inches)

### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s  
*Hydric soil status:* No  
*Hydrologic soil group:* C

### **Typical Profile**

A—0 to 8 inches; gravelly silt loam  
Bw—8 to 15 inches; channery loam  
Bx—15 to 70 inches; channery loam  
C—70 to 80 inches; very channery loam

### **Minor Components**

#### **Chippewa, extremely stony**

*Percent of map unit:* 10 percent  
*Landform:* Depressions  
*Geomorphic position (two-dimensional):* Toeslope  
*Geomorphic position (three-dimensional):* Interfluve  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil status:* Yes

#### **Swartswood**

*Percent of map unit:* 5 percent  
*Landform:* Hills  
*Geomorphic position (two-dimensional):* Backslope, footslope  
*Geomorphic position (three-dimensional):* Side slope  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects

*Slope:* 3 to 8 percent  
*Down-slope shape:* Convex, linear  
*Across-slope shape:* Linear, convex  
*Hydric soil status:* No

## **543374—Wurtsboro gravelly silt loam, 3 to 8 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 200 to 1,800 feet  
*Mean annual precipitation:* 30 to 50 inches  
*Mean annual air temperature:* 45 to 54 degrees F  
*Frost-free period:* 110 to 200 days

### ***Map Unit Composition***

Wurtsboro and similar soils: 90 percent  
Dissimilar minor components: 10 percent

### ***Description of Wurtsboro Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landscape:* Glaciated uplands  
*Landform:* Hills  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Base slope  
*Slope:* 3 to 8 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* High  
*Parent material:* Glacial till derived from quartzite, conglomerate, and/or sandstone  
*Restrictive feature(s):* Fragipan at a depth of 17 to 28 inches; lithic bedrock at a depth of 60 to 120 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* About 12 to 30 inches (perched)  
*Drainage class:* Moderately well drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Moderate (about 6.8 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 2w  
*Hydric soil status:* No  
*Hydrologic soil group:* C



**Typical Profile**

Ap—0 to 10 inches; gravelly silt loam

Bw—10 to 20 inches; gravelly loam

Bx—20 to 64 inches; very channery loam

**Minor Components**

**Chippewa**

*Percent of map unit:* 2 percent

*Landform:* Depressions

*Geomorphic position (two-dimensional):* Toeslope

*Geomorphic position (three-dimensional):* Interfluve

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* Yes

**Conotton**

*Percent of map unit:* 2 percent

*Landform:* Stream terraces

*Geomorphic position (two-dimensional):* Toeslope

*Geomorphic position (three-dimensional):* Riser, tread

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* No

**Halsey**

*Percent of map unit:* 2 percent

*Landform:* Flood plains

*Geomorphic position (two-dimensional):* Toeslope

*Geomorphic position (three-dimensional):* Tread

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 2 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* Yes

**Manlius**

*Percent of map unit:* 2 percent

*Landform:* Valley sides

*Geomorphic position (two-dimensional):* Summit

*Geomorphic position (three-dimensional):* Side slope, interfluve

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Down-slope shape:* Convex, linear

*Across-slope shape:* Linear, convex

*Hydric soil status:* No

**Phelps**

*Percent of map unit:* 2 percent

*Landform:* Terraces  
*Geomorphic position (two-dimensional):* Footslope  
*Geomorphic position (three-dimensional):* Tread  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 2 to 8 percent  
*Down-slope shape:* Concave, linear  
*Across-slope shape:* Linear, concave  
*Hydric soil status:* No

## **543375—Wurtsboro gravelly silt loam, 8 to 15 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 200 to 1,800 feet  
*Mean annual precipitation:* 30 to 50 inches  
*Mean annual air temperature:* 45 to 54 degrees F  
*Frost-free period:* 110 to 200 days

### ***Map Unit Composition***

Wurtsboro and similar soils: 90 percent  
Dissimilar minor components: 10 percent

### ***Description of Wurtsboro Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landscape:* Glaciated uplands  
*Landform:* Hills  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Base slope  
*Slope:* 8 to 15 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* High  
*Parent material:* Glacial till derived from quartzite, conglomerate, and/or sandstone  
*Restrictive feature(s):* Fragipan at a depth of 17 to 28 inches; lithic bedrock at a depth of 60 to 120 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* About 12 to 30 inches (perched)  
*Drainage class:* Moderately well drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Moderate (about 6.8 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 3e

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

Ap—0 to 10 inches; gravelly silt loam

Bw—10 to 20 inches; gravelly loam

Bx—20 to 64 inches; very channery loam

**Minor Components**

**Chippewa**

*Percent of map unit:* 2 percent

*Landform:* Depressions

*Geomorphic position (two-dimensional):* Toeslope

*Geomorphic position (three-dimensional):* Interfluvium

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* Yes

**Conotton**

*Percent of map unit:* 2 percent

*Landform:* Stream terraces

*Geomorphic position (two-dimensional):* Toeslope

*Geomorphic position (three-dimensional):* Riser, tread

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 8 to 15 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* No

**Halsey**

*Percent of map unit:* 2 percent

*Landform:* Flood plains

*Geomorphic position (two-dimensional):* Toeslope

*Geomorphic position (three-dimensional):* Tread

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 0 to 2 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* Yes

**Manlius**

*Percent of map unit:* 2 percent

*Landform:* Valley sides

*Geomorphic position (two-dimensional):* Shoulder

*Geomorphic position (three-dimensional):* Side slope

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 8 to 15 percent

*Down-slope shape:* Convex, linear

*Across-slope shape*: Linear, convex

*Hydric soil status*: No

**Phelps**

*Percent of map unit*: 2 percent

*Landform*: Terraces

*Geomorphic position (two-dimensional)*: Footslope

*Geomorphic position (three-dimensional)*: Tread

*Aspect (representative)*: Southeast

*Aspect (range)*: All aspects

*Slope*: 2 to 8 percent

*Down-slope shape*: Concave, linear

*Across-slope shape*: Linear, concave

*Hydric soil status*: No

## **612280—Scio silt loam, 0 to 3 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA)*: 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation*: 95 to 1,000 feet

*Mean annual precipitation*: 30 to 64 inches

*Mean annual air temperature*: 46 to 79 degrees F

*Frost-free period*: 131 to 178 days

### ***Map Unit Composition***

Scio and similar soils: 80 percent

Dissimilar minor components: 20 percent

### ***Description of Scio Soil***

#### **Soil Classification**

Coarse-silty, mixed, active, mesic Aquic Dystrudepts

#### **Setting**

*Landscape*: River valleys

*Landform*: Inner terraces

*Landform position (three-dimensional)*: Tread

*Slope*: 0 to 3 percent

*Down-slope shape*: Linear

*Across-slope shape*: Linear

*Aspect (representative)*: North

*Aspect (range)*: All aspects

*Soil temperature regime*: Mesic

*Soil moisture class*: Udic

#### **Properties and Qualities**

*Runoff*: Low

*Parent material*: Postglacial coarse-silty alluvium

*Restrictive feature(s)*: None within a depth of 60 inches

*Frequency of flooding*: None

*Frequency of ponding*: None

*Depth to water table*: About 18 to 24 inches

*Drainage class*: Moderately well drained

*Shrink-swell potential*: Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very high (about 13.2 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 2w

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

Ap1—0 to 6 inches; silt loam

Ap2—6 to 13 inches; silt loam

Bw1—13 to 23 inches; silt loam

Bw2—23 to 28 inches; silt loam

BC—28 to 50 inches; silt loam

C1—50 to 59 inches; silt loam

C2—59 to 72 inches; silt loam

**Minor Components**

**Aeric Endoaquepts, postglacial alluvium**

*Percent of map unit:* 10 percent

*Landform:* Inner terraces

*Geomorphic position (three-dimensional):* Tread

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* No

**Unadilla**

*Percent of map unit:* 10 percent

*Landform:* Inner terraces

*Geomorphic position (three-dimensional):* Tread

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* No

**612666—Colonie loamy fine sand, 0 to 3 percent slopes**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,800 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

**Map Unit Composition**

Colonie and similar soils: 80 percent

Dissimilar minor components: 20 percent

### ***Description of Colonie Soil***

#### **Soil Classification**

Mixed, mesic Lamellic Udipsamments

#### **Setting**

*Landscape:* River valleys

*Landform:* Outer terraces

*Slope:* 0 to 3 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Very low

*Parent material:* Postglacial sandy alluvium, sandy eolian deposits, and/or glaciofluvial deposits

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Somewhat excessively drained

*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.6 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 2s

*Hydric soil status:* No

*Hydrologic soil group:* A

#### **Typical Profile**

A—0 to 2 inches; loamy fine sand

Ap—2 to 11 inches; loamy fine sand

E—11 to 24 inches; fine sand

E and Bt1—24 to 40 inches; fine sand

E and Bt2—40 to 62 inches; fine sand

### ***Minor Components***

#### **Delaware**

*Percent of map unit:* 10 percent

*Landform:* Outer terraces

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* No

#### **Unadilla**

*Percent of map unit:* 10 percent

*Landform:* Outer terraces

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil status:* No

## **612668—Hoosic-Hazen complex, 8 to 15 percent slopes, very stony**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 400 to 1,745 feet  
*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Hoosic, very stony, and similar soils: 60 percent  
Hazen, very stony, and similar soils: 30 percent  
Dissimilar minor components: 10 percent

### ***Description of Hoosic, Very Stony, Soil***

#### **Soil Classification**

Sandy-skeletal, mixed, mesic Humic Dystrudepts

#### **Setting**

*Landscape:* Outwash plains  
*Landform:* Valley trains  
*Slope:* 8 to 15 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Very low  
*Parent material:* Glaciofluvial deposits derived from sandstone and shale  
*Restrictive feature(s):* None within a depth of 60 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Somewhat excessively drained  
*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Low (about 4.5 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 3e  
*Hydric soil status:* No  
*Hydrologic soil group:* B

#### **Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material  
Ap—1 to 9 inches; gravelly loam



Bw—9 to 21 inches; very gravelly coarse sandy loam  
2C1—21 to 27 inches; extremely gravelly loamy coarse sand  
2C2—27 to 37 inches; extremely gravelly coarse sand  
2C3—37 to 49 inches; extremely gravelly coarse sand  
2C4—49 to 60 inches; extremely gravelly coarse sand

### ***Description of Hazen, Very Stony, Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Mollic Hapludalfs

#### **Setting**

*Landscape:* Outwash plains

*Landform:* Valley trains

*Slope:* 8 to 15 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Low

*Parent material:* Coarse-loamy glaciofluvial deposits derived from limestone, sandstone, and shale

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.9 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 3e

*Hydric soil status:* No

*Hydrologic soil group:* B

#### **Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

Ap—1 to 10 inches; loam

Bt—10 to 18 inches; sandy loam

2C1—18 to 29 inches; very stony loamy coarse sand

2C2—29 to 41 inches; very gravelly coarse sand

2C3—41 to 60 inches; extremely gravelly coarse sand

### ***Minor Components***

#### **Colonie, very stony**

*Percent of map unit:* 5 percent

*Landform:* Valley trains

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 8 to 15 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* No

**Otisville, very stony**

*Percent of map unit:* 5 percent

*Landform:* Valley trains

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 8 to 15 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* No

**612724—Lordstown-Wallpack complex, 15 to 35 percent slopes, very rocky**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 800 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

***Map Unit Composition***

Lordstown, very rocky, and similar soils: 50 percent

Wallpack, very rocky, and similar soils: 40 percent

Dissimilar minor components: 10 percent

***Description of Lordstown, Very Rocky, Soil***

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Dystrudepts

**Setting**

*Landscape:* Till plains

*Landform:* Ridges

*Slope:* 15 to 35 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* High

*Parent material:* Coarse-loamy till derived from limestone, sandstone, and shale

*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 39 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.6 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated): 7s*

*Hydric soil status: No*

*Hydrologic soil group: C*

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; loam

E—2 to 3 inches; fine sandy loam

Bw1—3 to 5 inches; loam

Bw2—5 to 17 inches; gravelly loam

Bw3—17 to 22 inches; gravelly loam

C—22 to 36 inches; very gravelly fine sandy loam

2R—36 to 80 inches; bedrock

***Description of Wallpack, Very Rocky, Soil***

**Soil Classification**

Coarse-loamy, mixed, semiactive, mesic Typic Fragiudalfs

**Setting**

*Landscape:* Till plains

*Landform:* Ridges

*Slope:* 15 to 35 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very high

*Parent material:* Coarse-loamy till derived from limestone, sandstone, and shale

*Restrictive feature(s):* Fragipan at a depth of 12 to 36 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 8.0 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated): 7s*

*Hydric soil status: No*

*Hydrologic soil group: B*

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; gravelly silt loam

AB—2 to 5 inches; gravelly silt loam

Bt—5 to 18 inches; gravelly silt loam

Btx—18 to 24 inches; gravelly loam

BCtx1—24 to 42 inches; gravelly silt loam

BCtx2—42 to 60 inches; gravelly loam

### ***Minor Components***

#### **Chadakoin, very rocky**

*Percent of map unit:* 5 percent

*Landform:* Ridges

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 15 to 35 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* No

#### **Rock outcrop**

*Percent of map unit:* 5 percent

*Landform:* Ridges

*Aspect (representative):* North

*Aspect (range):* All aspects

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* Unranked

## **612732—Atherton mucky silt loam, 0 to 3 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 49.2 to 1,499 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Atherton, very poorly drained, and similar soils: 60 percent

Atherton, poorly drained, and similar soils: 30 percent

Dissimilar minor components: 10 percent

### ***Description of Atherton, Very Poorly Drained, Soil***

#### **Soil Classification**

Fine-silty, mixed, active, nonacid, mesic Aeric Endoaquepts

#### **Setting**

*Landscape:* River valleys

*Landform:* Depressions

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Tread

*Slope:* 0 to 3 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Aquic

#### **Properties and Qualities**

*Runoff:* Medium

*Parent material:* Postglacial fine-silty alluvium  
*Restrictive feature(s):* None within a depth of 60 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* Frequent  
*Depth to water table:* At the surface (perched)  
*Drainage class:* Very poorly drained  
*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* High (about 10.6 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 3w  
*Hydric soil status:* Yes  
*Hydrologic soil group:* B/D

**Typical Profile**

Oi—0 to 2 inches; slightly decomposed plant material  
Oe—2 to 4 inches; moderately decomposed plant material  
A—4 to 8 inches; mucky silt loam  
Bg1—8 to 10 inches; silt loam  
Bg2—10 to 18 inches; silt loam  
Bg3—18 to 29 inches; silt loam  
BC1—29 to 32 inches; silt loam  
BC2—32 to 41 inches; silt loam  
C1—41 to 45 inches; fine sandy loam  
C2—45 to 50 inches; loam  
C3—50 to 60 inches; very fine sandy loam  
C4—60 to 70 inches; fine sandy loam

***Description of Atherton, Poorly Drained, Soil***

**Soil Classification**

Fine-silty, mixed, active, nonacid, mesic Aeric Endoaquepts

**Setting**

*Landscape:* River valleys  
*Landform:* Depressions  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Tread  
*Slope:* 0 to 3 percent  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Aquic

**Properties and Qualities**

*Runoff:* Medium  
*Parent material:* Postglacial fine-silty alluvium  
*Restrictive feature(s):* None within a depth of 60 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* At the surface to a depth of 6 inches (perched)  
*Drainage class:* Poorly drained  
*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Moderate (about 7.4 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 3w

*Hydric soil status:* Yes

*Hydrologic soil group:* B/D

**Typical Profile**

A—0 to 6 inches; loam

Bg1—6 to 12 inches; loam

Bg2—12 to 30 inches; loam

2Cg1—30 to 40 inches; sandy clay loam

2Cg2—40 to 60 inches; sandy clay loam

**Minor Components**

**Aeric Endoaquepts, postglacial alluvium**

*Percent of map unit:* 10 percent

*Landform:* Inner terraces

*Geomorphic position (two-dimensional):* Toeslope

*Geomorphic position (three-dimensional):* Tread

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* No

**612738—Fluvaquents, loamy, 0 to 3 percent slopes,  
occasionally flooded**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

**Map Unit Composition**

Fluvaquents, occasionally flooded, and similar soils: 90 percent

Dissimilar minor components: 10 percent

**Description of Fluvaquents, Occasionally Flooded**

**Soil Classification**

Fluvaquents

**Setting**

*Landscape:* River valleys

*Landform:* Flood plains

*Landform position (three-dimensional):* Talf

*Slope:* 0 to 3 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Aquic

**Properties and Qualities**

*Runoff:* Low

*Parent material:* Recent alluvium

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* Occasional

*Frequency of ponding:* None

*Depth to water table:* At the surface to a depth of 18 inches

*Drainage class:* Somewhat poorly drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 6.1 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 3w

*Hydric soil status:* Yes

*Hydrologic soil group:* B/D

**Typical Profile**

A1—0 to 5 inches; silt loam

A2—5 to 12 inches; silt loam

C1—12 to 18 inches; sandy clay loam

C2—18 to 24 inches; sandy clay loam

C3—24 to 60 inches; sandy loam

**Minor Components**

**Udfluvents, occasionally flooded**

*Percent of map unit:* 10 percent

*Landform:* Flood plains

*Geomorphic position (three-dimensional):* Riser

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Down-slope shape:* Concave

*Across-slope shape:* Linear

*Hydric soil status:* No

**612753—Wallpack fine sandy loam, aeolian mantle, 8 to 15 percent slopes, very stony**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 800 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

**Map Unit Composition**

Wallpack, aeolian mantle, very stony, and similar soils: 85 percent

Dissimilar minor components: 15 percent

**Description of Wallpack, Aeolian Mantle, Very Stony, Soil**

**Soil Classification**

Coarse-loamy, mixed, semiactive, mesic Typic Hapludalfs



**Setting**

*Landscape:* Till plains

*Landform:* Ridges

*Slope:* 8 to 15 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Medium

*Parent material:* Eolian deposits over coarse-loamy till derived from limestone, sandstone, and shale

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.2 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 8.9 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 3e

*Hydric soil status:* No

*Hydrologic soil group:* B

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; fine sandy loam

Ap—2 to 8 inches; fine sandy loam

Bw1—8 to 14 inches; fine sandy loam

2Bw2—14 to 21 inches; fine sandy loam

2Bw3—21 to 26 inches; gravelly fine sandy loam

2BC1—26 to 31 inches; very gravelly fine sandy loam

2BC2—31 to 36 inches; very gravelly fine sandy loam

2BC3—36 to 60 inches; gravelly fine sandy loam

**Minor Components**

**Lordstown, very stony**

*Percent of map unit:* 10 percent

*Landform:* Ridges

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 8 to 15 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* No

**Aquic Dystrudepts, aeolian mantle, very stony**

*Percent of map unit:* 5 percent

*Landform:* Ridges

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 8 to 15 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Hydric soil status:* No

## **612756—Wallpack fine sandy loam, aeolian mantle, 0 to 8 percent slopes, very stony**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 400 to 800 feet  
*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Wallpack, aeolian mantle, very stony, and similar soils: 85 percent  
Dissimilar minor components: 15 percent

### ***Description of Wallpack, Aeolian Mantle, Very Stony, Soil***

#### **Soil Classification**

Coarse-loamy, mixed, semiactive, mesic Typic Hapludalfs

#### **Setting**

*Landscape:* Till plains  
*Landform:* Ridges  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Low  
*Parent material:* Eolian deposits over coarse-loamy till derived from limestone, sandstone, and shale  
*Restrictive feature(s):* None within a depth of 60 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 0.2 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Moderate (about 8.9 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 2e  
*Hydric soil status:* No  
*Hydrologic soil group:* B

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material  
A—1 to 2 inches; fine sandy loam  
Ap—2 to 8 inches; fine sandy loam  
Bw1—8 to 14 inches; fine sandy loam  
2Bw2—14 to 21 inches; fine sandy loam  
2Bw3—21 to 26 inches; gravelly fine sandy loam  
2BC1—26 to 31 inches; very gravelly fine sandy loam  
2BC2—31 to 36 inches; very gravelly fine sandy loam  
2BC3—36 to 60 inches; gravelly fine sandy loam

**Minor Components**

**Lordstown, very stony**

*Percent of map unit:* 10 percent  
*Landform:* Ridges  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Hydric soil status:* No

**Aquic Dystrudepts, aeolian mantle, very stony**

*Percent of map unit:* 5 percent  
*Landform:* Ridges  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Hydric soil status:* No

**612757—Wallpack fine sandy loam, aeolian mantle, 15 to 35 percent slopes, very stony**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 400 to 800 feet  
*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

**Map Unit Composition**

Wallpack, aeolian mantle, very stony, and similar soils: 85 percent  
Dissimilar minor components: 15 percent

**Description of Wallpack, Aeolian Mantle, Very Stony, Soil**

**Soil Classification**

Coarse-loamy, mixed, semiactive, mesic Typic Hapludalfs

**Setting**

*Landscape:* Till plains

*Landform*: Ridges  
*Slope*: 15 to 35 percent  
*Down-slope shape*: Convex  
*Across-slope shape*: Linear  
*Aspect (representative)*: North  
*Aspect (range)*: All aspects  
*Soil temperature regime*: Mesic  
*Soil moisture class*: Udic

**Properties and Qualities**

*Runoff*: High  
*Parent material*: Eolian deposits over coarse-loamy till derived from limestone, sandstone, and shale  
*Restrictive feature(s)*: None within a depth of 60 inches  
*Frequency of flooding*: None  
*Frequency of ponding*: None  
*Depth to water table*: More than 72 inches  
*Drainage class*: Well drained  
*Shrink-swell potential*: Low (about 0.2 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage)*: 0  
*Available water capacity*: Moderate (about 8.9 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated)*: 6e  
*Hydric soil status*: No  
*Hydrologic soil group*: B

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material  
A—1 to 2 inches; fine sandy loam  
Ap—2 to 8 inches; fine sandy loam  
Bw1—8 to 14 inches; fine sandy loam  
2Bw2—14 to 21 inches; fine sandy loam  
2Bw3—21 to 26 inches; gravelly fine sandy loam  
2BC1—26 to 31 inches; very gravelly fine sandy loam  
2BC2—31 to 36 inches; very gravelly fine sandy loam  
2BC3—36 to 60 inches; gravelly fine sandy loam

**Minor Components**

**Lordstown, very stony**

*Percent of map unit*: 10 percent  
*Landform*: Ridges  
*Aspect (representative)*: North  
*Aspect (range)*: All aspects  
*Slope*: 15 to 35 percent  
*Down-slope shape*: Convex  
*Across-slope shape*: Linear  
*Hydric soil status*: No

**Aquic Dystrudepts, aeolian mantle, very stony**

*Percent of map unit*: 5 percent  
*Landform*: Ridges  
*Aspect (representative)*: North  
*Aspect (range)*: All aspects  
*Slope*: 15 to 35 percent  
*Down-slope shape*: Convex

*Across-slope shape:* Linear

*Hydric soil status:* No

## **612767—Wellsboro silt loam, 8 to 15 percent slopes, extremely stony**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 1,095 to 1,800 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Wellsboro, extremely stony, and similar soils: 85 percent

Dissimilar minor components: 15 percent

### ***Description of Wellsboro, Extremely Stony, Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landscape:* Mountains

*Landform:* Ground moraines

*Slope:* 8 to 15 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Very high

*Parent material:* Coarse-loamy till derived from shale and/or coarse-loamy till derived from sandstone and siltstone

*Restrictive feature(s):* Fragipan at a depth of 12 to 30 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 15 to 32 inches (perched)

*Drainage class:* Moderately well drained

*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 8.7 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

#### **Typical Profile**

Ap—0 to 8 inches; silt loam

Bw1—8 to 15 inches; cobbly silt loam

Bw2—15 to 24 inches; cobbly loam

Bw3—24 to 29 inches; cobbly loam  
Bx1—29 to 37 inches; cobbly sandy loam  
Bx2—37 to 60 inches; cobbly sandy loam

### ***Minor Components***

#### **Morris, extremely stony**

*Percent of map unit:* 10 percent  
*Landform:* Ground moraines  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 0 to 15 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Hydric soil status:* No

#### **Lackawanna, extremely stony**

*Percent of map unit:* 5 percent  
*Landform:* Ground moraines  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 8 to 15 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Hydric soil status:* No

## **612768—Wellsboro silt loam, 0 to 8 percent slopes, extremely stony**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 1,095 to 1,800 feet  
*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Wellsboro, extremely stony, and similar soils: 85 percent  
Dissimilar minor components: 15 percent

### ***Description of Wellsboro, Extremely Stony, Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landscape:* Mountains  
*Landform:* Ground moraines  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very high

*Parent material:* Coarse-loamy till derived from shale and/or coarse-loamy till derived from sandstone and siltstone

*Restrictive feature(s):* Fragipan at a depth of 12 to 30 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 15 to 32 inches (perched)

*Drainage class:* Moderately well drained

*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 8.7 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

Ap—0 to 8 inches; silt loam

Bw1—8 to 15 inches; cobbly silt loam

Bw2—15 to 24 inches; cobbly loam

Bw3—24 to 29 inches; cobbly loam

Bx1—29 to 37 inches; cobbly sandy loam

Bx2—37 to 60 inches; cobbly sandy loam

**Minor Components**

**Morris, extremely stony**

*Percent of map unit:* 10 percent

*Landform:* Ground moraines

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* No

**Lackawanna, extremely stony**

*Percent of map unit:* 5 percent

*Landform:* Ground moraines

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* No

**613393—Alden silt loam, 0 to 8 percent slopes, extremely stony**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,800 feet



*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

### **Map Unit Composition**

Alden, extremely stony, and similar soils: 90 percent  
Dissimilar minor components: 10 percent

### **Description of Alden, Extremely Stony, Soil**

#### **Soil Classification**

Fine-loamy, mixed, active, nonacid, mesic Mollic Endoaquepts

#### **Setting**

*Landscape:* Till plains  
*Landform:* Depressions  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Base slope  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Aquic

#### **Properties and Qualities**

*Runoff:* Low  
*Parent material:* Silty colluvium derived from sandstone over fine-loamy till derived from sandstone  
*Restrictive feature(s):* None within a depth of 60 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* Frequent  
*Depth to water table:* At the surface (perched)  
*Drainage class:* Very poorly drained  
*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* High (about 9.9 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s  
*Hydric soil status:* Yes  
*Hydrologic soil group:* D

#### **Typical Profile**

Oi—0 to 2 inches; slightly decomposed plant material  
A—2 to 7 inches; silt loam  
Bg1—7 to 14 inches; silt loam  
Bg2—14 to 28 inches; silty clay loam  
Bg3—28 to 43 inches; loam  
C—43 to 60 inches; silt loam

### **Minor Components**

#### **Chippewa, extremely stony**

*Percent of map unit:* 10 percent  
*Landform:* Depressions  
*Geomorphic position (two-dimensional):* Toeslope

*Geomorphic position (three-dimensional):* Base slope  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil status:* Yes

## **613447—Unadilla silt loam, 0 to 3 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 400 to 1,800 feet  
*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Unadilla and similar soils: 85 percent  
Dissimilar minor components: 15 percent

### ***Description of Unadilla Soil***

#### **Soil Classification**

Coarse-silty, mixed, active, mesic Typic Dystrudepts

#### **Setting**

*Landscape:* River valleys  
*Landform:* Inner terraces  
*Landform position (three-dimensional):* Tread  
*Slope:* 0 to 3 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Low  
*Parent material:* Postglacial coarse-silty alluvium  
*Restrictive feature(s):* None within a depth of 60 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* High (about 9.6 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 1  
*Hydric soil status:* No  
*Hydrologic soil group:* B

**Typical Profile**

Ap1—0 to 8 inches; silt loam  
Ap2—8 to 14 inches; silt loam  
Bw—14 to 25 inches; silt loam  
BC—25 to 39 inches; silt loam  
C—39 to 60 inches; very fine sandy loam

**Minor Components**

**Delaware**

*Percent of map unit:* 10 percent  
*Landform:* Inner terraces  
*Geomorphic position (three-dimensional):* Tread  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 0 to 3 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil status:* No

**Colonie**

*Percent of map unit:* 5 percent  
*Landform:* Inner terraces  
*Geomorphic position (three-dimensional):* Tread  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 0 to 3 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil status:* No

**613448—Unadilla silt loam, 3 to 8 percent slopes**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 400 to 1,800 feet  
*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

**Map Unit Composition**

Unadilla and similar soils: 85 percent  
Dissimilar minor components: 15 percent

**Description of Unadilla Soil**

**Soil Classification**

Coarse-silty, mixed, active, mesic Typic Dystrudepts

**Setting**

*Landscape:* River valleys  
*Landform:* Inner terraces  
*Landform position (three-dimensional):* Riser  
*Slope:* 3 to 8 percent

*Down-slope shape*: Linear  
*Across-slope shape*: Linear  
*Aspect (representative)*: North  
*Aspect (range)*: All aspects  
*Soil temperature regime*: Mesic  
*Soil moisture class*: Udic

#### **Properties and Qualities**

*Runoff*: Medium  
*Parent material*: Postglacial coarse-silty alluvium  
*Restrictive feature(s)*: None within a depth of 60 inches  
*Frequency of flooding*: None  
*Frequency of ponding*: None  
*Depth to water table*: More than 72 inches  
*Drainage class*: Well drained  
*Shrink-swell potential*: Low (about 0.1 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage)*: 0  
*Available water capacity*: High (about 9.6 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated)*: 2e  
*Hydric soil status*: No  
*Hydrologic soil group*: B

#### **Typical Profile**

Ap1—0 to 8 inches; silt loam  
Ap2—8 to 14 inches; silt loam  
Bw—14 to 25 inches; silt loam  
BC—25 to 39 inches; silt loam  
C—39 to 60 inches; very fine sandy loam

### ***Minor Components***

#### **Delaware**

*Percent of map unit*: 10 percent  
*Landform*: Inner terraces  
*Geomorphic position (three-dimensional)*: Riser  
*Aspect (representative)*: North  
*Aspect (range)*: All aspects  
*Slope*: 3 to 8 percent  
*Down-slope shape*: Linear  
*Across-slope shape*: Linear  
*Hydric soil status*: No

#### **Colonie**

*Percent of map unit*: 5 percent  
*Landform*: Inner terraces  
*Geomorphic position (three-dimensional)*: Tread  
*Aspect (representative)*: North  
*Aspect (range)*: All aspects  
*Slope*: 3 to 8 percent  
*Down-slope shape*: Linear  
*Across-slope shape*: Linear  
*Hydric soil status*: No

## **614075—Wurtsboro-Swartswood complex, 15 to 35 percent slopes, extremely stony**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,100 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Wurtsboro, extremely stony, and similar soils: 80 percent

Swartswood, extremely stony, and similar soils: 20 percent

### ***Description of Wurtsboro, Extremely Stony, Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landscape:* Till plains

*Landform:* Ground moraines

*Slope:* 15 to 35 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Very high

*Parent material:* Bouldery, quartzose, coarse-loamy drift derived from conglomerate

*Restrictive feature(s):* Fragipan at a depth of 17 to 28 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 15 to 26 inches (perched)

*Drainage class:* Moderately well drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 7.1 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

#### **Typical Profile**

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 3 inches; fine sandy loam

E—3 to 4 inches; fine sandy loam

Bhs—4 to 6 inches; fine sandy loam

Bw1—6 to 18 inches; sandy loam

Bw2—18 to 24 inches; gravelly sandy loam

Bx1—24 to 33 inches; gravelly sandy loam

Bx2—33 to 60 inches; gravelly sandy loam

***Description of Swartswood, Extremely Stony, Soil***

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

**Setting**

*Landscape:* Till plains

*Landform:* Ground moraines

*Slope:* 15 to 35 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very high

*Parent material:* Bouldery, quartzose, coarse-loamy drift derived from conglomerate

*Restrictive feature(s):* Fragipan at a depth of 20 to 36 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 5.6 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; loam

E—2 to 3 inches; fine sandy loam

Bhs—3 to 4 inches; gravelly fine sandy loam

Bw—4 to 21 inches; gravelly fine sandy loam

Bx1—21 to 32 inches; gravelly sandy loam

Bx2—32 to 60 inches; gravelly sandy loam

**620179—Arnot-Lordstown complex, 0 to 15 percent slopes, very rocky**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,800 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Arnot, very rocky, and similar soils: 55 percent  
Lordstown, very rocky, and similar soils: 40 percent  
Dissimilar minor components: 5 percent

### ***Description of Arnot, Very Rocky, Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts

#### **Setting**

*Landscape:* Mountains  
*Landform:* Ground moraines  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Mountaintop  
*Slope:* 0 to 15 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* High  
*Parent material:* Loamy till derived from conglomerate  
*Restrictive feature(s):* Lithic bedrock at a depth of 10 to 20 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Somewhat excessively drained  
*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Very low (about 2.1 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s  
*Hydric soil status:* No  
*Hydrologic soil group:* D

#### **Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material  
A—1 to 2 inches; loam  
E—2 to 3 inches; fine sandy loam  
Bhs—3 to 4 inches; fine sandy loam  
Bw1—4 to 12 inches; very gravelly loam  
Bw2—12 to 17 inches; extremely gravelly loam  
2R—17 to 80 inches; bedrock

### ***Description of Lordstown, Very Rocky, Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Dystrudepts

#### **Setting**

*Landscape:* Mountains  
*Landform:* Ground moraines  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Mountaintop



*Slope*: 0 to 15 percent  
*Down-slope shape*: Linear  
*Across-slope shape*: Convex  
*Aspect (representative)*: North  
*Aspect (range)*: All aspects  
*Soil temperature regime*: Mesic  
*Soil moisture class*: Udic

**Properties and Qualities**

*Runoff*: Medium  
*Parent material*: Coarse-loamy till derived from conglomerate  
*Restrictive feature(s)*: Lithic bedrock at a depth of 20 to 39 inches  
*Frequency of flooding*: None  
*Frequency of ponding*: None  
*Depth to water table*: More than 72 inches  
*Drainage class*: Well drained  
*Shrink-swell potential*: Low (about 0.1 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage)*: 0  
*Available water capacity*: Low (about 4.6 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated)*: 7s  
*Hydric soil status*: No  
*Hydrologic soil group*: C

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material  
A—1 to 2 inches; loam  
E—2 to 3 inches; fine sandy loam  
Bw1—3 to 5 inches; loam  
Bw2—5 to 17 inches; gravelly loam  
Bw3—17 to 22 inches; gravelly loam  
C—22 to 36 inches; very gravelly fine sandy loam  
2R—36 to 80 inches; bedrock

**Minor Components**

**Rock outcrop**

*Percent of map unit*: 5 percent  
*Landform*: Ground moraines  
*Geomorphic position (two-dimensional)*: Summit  
*Geomorphic position (three-dimensional)*: Mountaintop  
*Aspect (representative)*: North  
*Aspect (range)*: All aspects  
*Down-slope shape*: Linear  
*Across-slope shape*: Convex  
*Hydric soil status*: Unranked

**620180—Arnot-Lordstown-Rock outcrop complex, 15 to 35 percent slopes**

**Map Unit Setting**

*Major land resource area (MLRA)*: 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation*: 400 to 1,800 feet  
*Mean annual precipitation*: 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Arnot and similar soils: 45 percent

Lordstown and similar soils: 40 percent

Rock outcrop: 15 percent

### ***Description of Arnot Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts

#### **Setting**

*Landscape:* Mountains

*Landform:* Ground moraines

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Mountain flank

*Slope:* 15 to 35 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Very high

*Parent material:* Loamy till derived from conglomerate

*Restrictive feature(s):* Lithic bedrock at a depth of 10 to 20 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Somewhat excessively drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 2.1 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* D

#### **Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; loam

E—2 to 3 inches; fine sandy loam

Bhs—3 to 4 inches; fine sandy loam

Bw1—4 to 12 inches; very gravelly loam

Bw2—12 to 17 inches; extremely gravelly loam

2R—17 to 80 inches; bedrock

### ***Description of Lordstown Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Dystrudepts

#### **Setting**

*Landscape:* Mountains

*Landform:* Ground moraines

*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Mountain flank  
*Slope:* 15 to 35 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* High  
*Parent material:* Coarse-loamy till derived from conglomerate  
*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 39 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Low (about 4.6 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s  
*Hydric soil status:* No  
*Hydrologic soil group:* C

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material  
A—1 to 2 inches; loam  
E—2 to 3 inches; fine sandy loam  
Bw1—3 to 5 inches; loam  
Bw2—5 to 17 inches; gravelly loam  
Bw3—17 to 22 inches; gravelly loam  
C—22 to 36 inches; very gravelly fine sandy loam  
2R—36 to 80 inches; bedrock

***Description of Rock Outcrop***

**Setting**

*Landscape:* Mountains  
*Landform:* Ground moraines  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Mountain flank  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects

**Properties and Qualities**

*Parent material:* Conglomerate  
*Restrictive feature(s):* Lithic bedrock at the surface  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Calcium carbonate equivalent (maximum weight percentage):* 0

**Interpretive Groups**

*Land capability classification (nonirrigated):* 8s

*Hydric soil status:* Unranked

*Hydrologic soil group:* D

**Typical Profile**

R—0 to 80 inches; bedrock

**620181—Arnot-Lordstown-Rock outcrop complex, 35 to 60 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,800 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

***Map Unit Composition***

Arnot and similar soils: 60 percent

Lordstown and similar soils: 25 percent

Rock outcrop: 15 percent

***Description of Arnot Soil***

**Soil Classification**

Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts

**Setting**

*Landscape:* Mountains

*Landform:* Ground moraines

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Mountain flank

*Slope:* 35 to 60 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very high

*Parent material:* Loamy till derived from conglomerate

*Restrictive feature(s):* Lithic bedrock at a depth of 10 to 20 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Somewhat excessively drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 2.1 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* D

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material  
A—1 to 2 inches; loam  
E—2 to 3 inches; fine sandy loam  
Bhs—3 to 4 inches; fine sandy loam  
Bw1—4 to 12 inches; very gravelly loam  
Bw2—12 to 17 inches; extremely gravelly loam  
2R—17 to 80 inches; bedrock

***Description of Lordstown Soil***

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Dystrudepts

**Setting**

*Landscape:* Mountains  
*Landform:* Ground moraines  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Mountain flank  
*Slope:* 35 to 60 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very high  
*Parent material:* Coarse-loamy till derived from conglomerate  
*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 39 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Low (about 4.6 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s  
*Hydric soil status:* No  
*Hydrologic soil group:* C

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material  
A—1 to 2 inches; loam  
E—2 to 3 inches; fine sandy loam  
Bw1—3 to 5 inches; loam  
Bw2—5 to 17 inches; gravelly loam  
Bw3—17 to 22 inches; gravelly loam  
C—22 to 36 inches; very gravelly fine sandy loam  
2R—36 to 80 inches; bedrock

***Description of Rock Outcrop***

**Setting**

*Landscape:* Mountains  
*Landform:* Ground moraines

*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Mountain flank  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects

**Properties and Qualities**

*Parent material:* Conglomerate  
*Restrictive feature(s):* Lithic bedrock at the surface  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Calcium carbonate equivalent (maximum weight percentage):* 0

**Interpretive Groups**

*Land capability classification (nonirrigated):* 8s  
*Hydric soil status:* Unranked  
*Hydrologic soil group:* D

**Typical Profile**

R—0 to 80 inches; bedrock

**623089—Chippewa silt loam, 0 to 8 percent slopes,  
extremely stony**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 400 to 1,000 feet  
*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

***Map Unit Composition***

Chippewa, extremely stony, and similar soils: 80 percent  
Dissimilar minor components: 20 percent

***Description of Chippewa, Extremely Stony, Soil***

**Soil Classification**

Fine-loamy, mixed, active, mesic Typic Fragiaquepts

**Setting**

*Landscape:* Drumlin fields  
*Landform:* Interdrumlins  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Aquic

**Properties and Qualities**

*Runoff:* Very high

*Parent material:* Fine-loamy till derived from limestone, sandstone, and shale

*Restrictive feature(s):* Fragipan at a depth of 8 to 20 inches

*Frequency of flooding:* None

*Frequency of ponding:* Frequent

*Depth to water table:* At the surface (perched)

*Drainage class:* Poorly drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 3.4 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* Yes

*Hydrologic soil group:* D

#### **Typical Profile**

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 4 inches; silt loam

Eg—4 to 8 inches; silt loam

Bg—8 to 13 inches; silt loam

Bgx1—13 to 21 inches; silt loam

Bgx2—21 to 29 inches; silt loam

Cg1—29 to 34 inches; silt loam

Cg2—34 to 60 inches; fine sandy loam

#### **Minor Components**

##### **Alden, extremely stony**

*Percent of map unit:* 10 percent

*Landform:* Interdrumlins

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* Yes

##### **Venango, extremely stony**

*Percent of map unit:* 10 percent

*Landform:* Drumlins

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil status:* No

## **623109—Farmington-Rock outcrop complex, 0 to 15 percent slopes**

#### **Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 900 feet

*Mean annual precipitation:* 30 to 64 inches



*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Farmington and similar soils: 50 percent

Rock outcrop: 40 percent

Dissimilar minor components: 10 percent

### ***Description of Farmington Soil***

#### **Soil Classification**

Loamy, mixed, active, mesic Lithic Eutrudepts

#### **Setting**

*Landscape:* Till plains

*Landform:* Ground moraines

*Slope:* 0 to 15 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Medium

*Parent material:* Loamy till derived from limestone and dolomite

*Restrictive feature(s):* Lithic bedrock at a depth of 10 to 20 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 2.2 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* D

#### **Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; silt loam

Bw1—3 to 9 inches; silt loam

Bw2—9 to 15 inches; silt loam

2R—15 to 80 inches; bedrock

### ***Description of Rock Outcrop***

#### **Setting**

*Landscape:* Till plains

*Landform:* Ground moraines

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

**Properties and Qualities**

*Parent material:* Limestone and dolomite

*Restrictive feature(s):* Lithic bedrock at the surface

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Calcium carbonate equivalent (maximum weight percentage):* 0

**Interpretive Groups**

*Land capability classification (nonirrigated):* 8s

*Hydric soil status:* Unranked

*Hydrologic soil group:* D

**Typical Profile**

R—0 to 80 inches; bedrock

**Minor Components**

**Galway**

*Percent of map unit:* 10 percent

*Landform:* Ground moraines

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 0 to 15 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* No

**624811—Galway loam, 35 to 60 percent slopes, very rocky**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 900 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

**Map Unit Composition**

Galway, very rocky, and similar soils: 80 percent

Dissimilar minor components: 20 percent

**Description of Galway, Very Rocky, Soil**

**Soil Classification**

Coarse-loamy, mixed, superactive, mesic Typic Eutrudepts

**Setting**

*Landscape:* Till plains

*Landform:* Ridges

*Slope:* 35 to 60 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* High

*Parent material:* Coarse-loamy till derived from limestone and dolomite

*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 39 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 3.8 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

Oi—0 to 2 inches; slightly decomposed plant material

Oe—2 to 3 inches; moderately decomposed plant material

A—3 to 5 inches; loam

Bw1—5 to 15 inches; gravelly loam

Bw2—15 to 24 inches; gravelly loam

2R—24 to 80 inches; bedrock

**Minor Components**

**Farmington, very rocky**

*Percent of map unit:* 10 percent

*Landform:* Ridges

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 35 to 60 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* No

**Rock outcrop**

*Percent of map unit:* 5 percent

*Landform:* Ridges

*Aspect (representative):* North

*Aspect (range):* All aspects

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* Unranked

**Wallpack, aeolian mantle, very rocky**

*Percent of map unit:* 5 percent

*Landform:* Ridges

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 35 to 60 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* No

## **624813—Lackawanna cobbly fine sandy loam, 0 to 8 percent slopes, extremely stony**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 695 to 1,800 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Lackawanna, extremely stony, and similar soils: 85 percent

Dissimilar minor components: 15 percent

### ***Description of Lackawanna, Extremely Stony, Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landscape:* Mountains

*Landform:* Ground moraines

*Slope:* 0 to 8 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* High

*Parent material:* Coarse-loamy till derived from shale and/or coarse-loamy till derived from sandstone and siltstone

*Restrictive feature(s):* Fragipan at a depth of 14 to 36 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 6.9 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

#### **Vegetation**

*Existing plants:* Red maple, sedge, rare clubmoss, and northern red oak

#### **Typical Profile**

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 3 inches; cobbly fine sandy loam

E—3 to 7 inches; cobbly fine sandy loam

Bhs—7 to 8 inches; cobbly fine sandy loam

Bw1—8 to 16 inches; stony loam  
Bw2—16 to 24 inches; stony loam  
Bx1—24 to 29 inches; stony fine sandy loam  
Bx2—29 to 60 inches; very cobbly fine sandy loam

### ***Minor Components***

#### **Wellsboro, extremely stony**

*Percent of map unit:* 10 percent  
*Landform:* Ground moraines  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil status:* No

#### **Oquaga, extremely stony**

*Percent of map unit:* 5 percent  
*Landform:* Ground moraines  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil status:* No

## **624816—Lordstown-Wallpack complex, 8 to 15 percent slopes, very rocky**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 400 to 800 feet  
*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Lordstown, very rocky, and similar soils: 50 percent  
Wallpack, very rocky, and similar soils: 35 percent  
Dissimilar minor components: 15 percent

### ***Description of Lordstown, Very Rocky, Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Dystrudepts

#### **Setting**

*Landscape:* Till plains  
*Landform:* Ridges  
*Slope:* 8 to 15 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Medium

*Parent material:* Coarse-loamy till derived from limestone, sandstone, and shale

*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 39 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.6 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 6s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; loam

E—2 to 3 inches; fine sandy loam

Bw1—3 to 5 inches; loam

Bw2—5 to 17 inches; gravelly loam

Bw3—17 to 22 inches; gravelly loam

C—22 to 36 inches; very gravelly fine sandy loam

2R—36 to 80 inches; bedrock

***Description of Wallpack, Very Rocky, Soil***

**Soil Classification**

Coarse-loamy, mixed, semiactive, mesic Typic Fragiudalfs

**Setting**

*Landscape:* Till plains

*Landform:* Ridges

*Slope:* 8 to 15 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very high

*Parent material:* Coarse-loamy till derived from limestone, sandstone, and shale

*Restrictive feature(s):* Fragipan at a depth of 12 to 36 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 8.0 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 6s

*Hydric soil status:* No

*Hydrologic soil group:* B

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; gravelly silt loam

AB—2 to 5 inches; gravelly silt loam

Bt—5 to 18 inches; gravelly silt loam

Btx—18 to 24 inches; gravelly loam

BCtx1—24 to 42 inches; gravelly silt loam

BCtx2—42 to 60 inches; gravelly loam

**Minor Components**

**Cambridge, very rocky**

*Percent of map unit:* 5 percent

*Landform:* Ridges

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 8 to 15 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* No

**Chadakoin, very rocky**

*Percent of map unit:* 5 percent

*Landform:* Ridges

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 8 to 15 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* No

**Rock outcrop**

*Percent of map unit:* 5 percent

*Landform:* Ridges

*Aspect (representative):* North

*Aspect (range):* All aspects

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* Unranked

**624822—Lordstown-Wallpack complex, 15 to 25 percent slopes**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 800 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days



### ***Map Unit Composition***

Lordstown and similar soils: 50 percent  
Wallpack and similar soils: 35 percent  
Dissimilar minor components: 15 percent

### ***Description of Lordstown Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Dystrudepts

#### **Setting**

*Landscape:* Till plains  
*Landform:* Ridges  
*Slope:* 15 to 25 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* High  
*Parent material:* Coarse-loamy till derived from limestone, sandstone, and shale  
*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 39 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Low (about 4.6 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 4e  
*Hydric soil status:* No  
*Hydrologic soil group:* C

#### **Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material  
A—1 to 2 inches; loam  
E—2 to 3 inches; fine sandy loam  
Bw1—3 to 5 inches; loam  
Bw2—5 to 17 inches; gravelly loam  
Bw3—17 to 22 inches; gravelly loam  
C—22 to 36 inches; very gravelly fine sandy loam  
2R—36 to 80 inches; bedrock

### ***Description of Wallpack Soil***

#### **Soil Classification**

Coarse-loamy, mixed, semiactive, mesic Typic Fragiudalfs

#### **Setting**

*Landscape:* Till plains  
*Landform:* Ridges  
*Slope:* 15 to 25 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear

*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very high  
*Parent material:* Coarse-loamy till derived from limestone, sandstone, and shale  
*Restrictive feature(s):* Fragipan at a depth of 12 to 36 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Moderate (about 6.8 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 4e  
*Hydric soil status:* No  
*Hydrologic soil group:* B

**Typical Profile**

Ap1—0 to 3 inches; silt loam  
Ap2—3 to 9 inches; gravelly silt loam  
Bt—9 to 16 inches; gravelly silt loam  
Btx1—16 to 25 inches; gravelly silt loam  
Btx2—25 to 65 inches; very gravelly silt loam

***Minor Components***

**Chadakoin**

*Percent of map unit:* 10 percent  
*Landform:* Ridges  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 15 to 25 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Hydric soil status:* No

**Cambridge**

*Percent of map unit:* 5 percent  
*Landform:* Ridges  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 15 to 25 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Hydric soil status:* No

**624823—Lordstown-Wallpack complex, 8 to 15 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 800 feet  
*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Lordstown and similar soils: 50 percent  
Wallpack and similar soils: 35 percent  
Dissimilar minor components: 15 percent

### ***Description of Lordstown Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Dystrudepts

#### **Setting**

*Landscape:* Till plains  
*Landform:* Ridges  
*Slope:* 8 to 15 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Medium  
*Parent material:* Coarse-loamy till derived from limestone, sandstone, and shale  
*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 39 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Low (about 4.6 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 3e  
*Hydric soil status:* No  
*Hydrologic soil group:* C

#### **Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material  
A—1 to 2 inches; loam  
E—2 to 3 inches; fine sandy loam  
Bw1—3 to 5 inches; loam  
Bw2—5 to 17 inches; gravelly loam  
Bw3—17 to 22 inches; gravelly loam  
C—22 to 36 inches; very gravelly fine sandy loam  
2R—36 to 80 inches; bedrock

### ***Description of Wallpack Soil***

#### **Soil Classification**

Coarse-loamy, mixed, semiactive, mesic Typic Fragiudalfs

**Setting**

*Landscape:* Till plains

*Landform:* Ridges

*Slope:* 8 to 15 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very high

*Parent material:* Coarse-loamy till derived from limestone, sandstone, and shale

*Restrictive feature(s):* Fragipan at a depth of 12 to 36 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 6.8 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 3e

*Hydric soil status:* No

*Hydrologic soil group:* B

**Typical Profile**

Ap1—0 to 3 inches; silt loam

Ap2—3 to 9 inches; gravelly silt loam

Bt—9 to 16 inches; gravelly silt loam

Btx1—16 to 25 inches; gravelly silt loam

Btx2—25 to 65 inches; very gravelly silt loam

**Minor Components**

**Chadakoin**

*Percent of map unit:* 10 percent

*Landform:* Ridges

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 8 to 15 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* No

**Cambridge**

*Percent of map unit:* 5 percent

*Landform:* Ridges

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 8 to 15 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* No

## **624824—Lordstown-Wallpack complex, 0 to 8 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 800 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Lordstown and similar soils: 50 percent

Wallpack and similar soils: 35 percent

Dissimilar minor components: 15 percent

### ***Description of Lordstown Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Dystrudepts

#### **Setting**

*Landscape:* Till plains

*Landform:* Ridges

*Slope:* 0 to 8 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Low

*Parent material:* Coarse-loamy till derived from limestone, sandstone, and shale

*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 39 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.6 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 2e

*Hydric soil status:* No

*Hydrologic soil group:* C

#### **Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; loam

E—2 to 3 inches; fine sandy loam

Bw1—3 to 5 inches; loam

Bw2—5 to 17 inches; gravelly loam

Bw3—17 to 22 inches; gravelly loam

C—22 to 36 inches; very gravelly fine sandy loam

2R—36 to 80 inches; bedrock

### ***Description of Wallpack Soil***

#### **Soil Classification**

Coarse-loamy, mixed, semiactive, mesic Typic Fragiudalfs

#### **Setting**

*Landscape:* Till plains

*Landform:* Ridges

*Slope:* 0 to 8 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Very high

*Parent material:* Coarse-loamy till derived from limestone, sandstone, and shale

*Restrictive feature(s):* Fragipan at a depth of 12 to 36 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 6.8 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 2e

*Hydric soil status:* No

*Hydrologic soil group:* C

#### **Typical Profile**

Ap1—0 to 3 inches; silt loam

Ap2—3 to 9 inches; gravelly silt loam

Bt—9 to 16 inches; gravelly silt loam

Btx1—16 to 25 inches; gravelly silt loam

Btx2—25 to 65 inches; very gravelly silt loam

### ***Minor Components***

#### **Chadakoin**

*Percent of map unit:* 10 percent

*Landform:* Ridges

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* No

#### **Cambridge**

*Percent of map unit:* 5 percent

*Landform:* Ridges

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* No

## **624826—Manlius-Nassau complex, 35 to 60 percent slopes, very rocky**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 800 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Manlius, very rocky, and similar soils: 60 percent

Nassau, very rocky, and similar soils: 25 percent

Dissimilar minor components: 15 percent

### ***Description of Manlius, Very Rocky, Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

#### **Setting**

*Landscape:* Till plains

*Landform:* Ridges

*Slope:* 35 to 60 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* High

*Parent material:* Loamy till derived from acid shale

*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 39 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 2.7 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C



**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material  
A—1 to 2 inches; very channery silt loam  
Bw—2 to 18 inches; extremely channery silt loam  
C—18 to 27 inches; extremely channery silt loam  
2R—27 to 80 inches; bedrock

***Description of Nassau, Very Rocky, Soil***

**Soil Classification**

Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts

**Setting**

*Landscape:* Till plains

*Landform:* Ridges

*Slope:* 35 to 60 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* High

*Parent material:* Loamy till derived from acid shale

*Restrictive feature(s):* Lithic bedrock at a depth of 10 to 20 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Somewhat excessively drained

*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 1.9 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* D

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material  
A—1 to 2 inches; very channery silt loam  
Bw—2 to 15 inches; extremely channery silt loam  
2R—15 to 80 inches; bedrock

***Minor Components***

**Rock outcrop**

*Percent of map unit:* 10 percent

*Landform:* Ridges

*Aspect (representative):* North

*Aspect (range):* All aspects

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* Unranked

**Wallpack, very rocky**

*Percent of map unit:* 5 percent

*Landform:* Ridges  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 35 to 60 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Hydric soil status:* No

## **624827—Nassau-Manlius complex, 0 to 8 percent slopes, very rocky**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 400 to 1,550 feet  
*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Nassau, very rocky, and similar soils: 55 percent  
Manlius, very rocky, and similar soils: 44 percent  
Dissimilar minor components: 1 percent

### ***Description of Nassau, Very Rocky, Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts

#### **Setting**

*Landscape:* Till plains  
*Landform:* Ground moraines  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Low  
*Parent material:* Loamy till derived from acid shale  
*Restrictive feature(s):* Lithic bedrock at a depth of 10 to 20 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Somewhat excessively drained  
*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Very low (about 1.7 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* D

**Typical Profile**

Ap—0 to 7 inches; very channery silt loam

Bw—7 to 13 inches; extremely channery silt loam

2R—13 to 80 inches; bedrock

***Description of Manlius, Very Rocky, Soil***

**Soil Classification**

Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

**Setting**

*Landscape:* Till plains

*Landform:* Ground moraines

*Slope:* 0 to 8 percent

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Low

*Parent material:* Loamy till derived from acid shale

*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 39 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 2.9 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 6s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

Ap—0 to 9 inches; very channery silt loam

Bw—9 to 20 inches; extremely channery silt loam

CB—20 to 29 inches; extremely channery silt loam

2R—29 to 80 inches; bedrock

***Minor Components***

**Rock outcrop**

*Percent of map unit:* 1 percent

*Landform:* Ground moraines

*Aspect (representative):* North

*Aspect (range):* All aspects

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* Unranked

## **624828—Nassau-Manlius complex, 8 to 15 percent slopes, very rocky**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,550 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Nassau, very rocky, and similar soils: 55 percent

Manlius, very rocky, and similar soils: 44 percent

Dissimilar minor components: 1 percent

### ***Description of Nassau, Very Rocky, Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts

#### **Setting**

*Landscape:* Till plains

*Landform:* Ground moraines

*Slope:* 8 to 15 percent

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Medium

*Parent material:* Loamy till derived from acid shale

*Restrictive feature(s):* Lithic bedrock at a depth of 10 to 20 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Somewhat excessively drained

*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 1.7 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* D

#### **Typical Profile**

Ap—0 to 7 inches; very channery silt loam

Bw—7 to 13 inches; extremely channery silt loam

2R—13 to 80 inches; bedrock

### ***Description of Manlius, Very Rocky, Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

**Setting**

*Landscape:* Till plains  
*Landform:* Ground moraines  
*Slope:* 8 to 15 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Medium  
*Parent material:* Loamy till derived from acid shale  
*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 39 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Very low (about 2.9 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 6s  
*Hydric soil status:* No  
*Hydrologic soil group:* C

**Typical Profile**

Ap—0 to 9 inches; very channery silt loam  
Bw—9 to 20 inches; extremely channery silt loam  
CB—20 to 29 inches; extremely channery silt loam  
2R—29 to 80 inches; bedrock

***Minor Components***

**Rock outcrop**

*Percent of map unit:* 1 percent  
*Landform:* Ground moraines  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Hydric soil status:* Unranked

**624829—Nassau-Manlius complex, 15 to 35 percent slopes, very rocky**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 400 to 1,550 feet  
*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Nassau, very rocky, and similar soils: 55 percent

Manlius, very rocky, and similar soils: 44 percent

Dissimilar minor components: 1 percent

### ***Description of Nassau, Very Rocky, Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts

#### **Setting**

*Landscape:* Till plains

*Landform:* Ground moraines

*Slope:* 15 to 35 percent

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* High

*Parent material:* Loamy till derived from acid shale

*Restrictive feature(s):* Lithic bedrock at a depth of 10 to 20 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Somewhat excessively drained

*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 1.7 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* D

#### **Typical Profile**

Ap—0 to 7 inches; very channery silt loam

Bw—7 to 13 inches; extremely channery silt loam

2R—13 to 80 inches; bedrock

### ***Description of Manlius, Very Rocky, Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

#### **Setting**

*Landscape:* Till plains

*Landform:* Ground moraines

*Slope:* 15 to 35 percent

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

### **Properties and Qualities**

*Runoff:* High

*Parent material:* Loamy till derived from acid shale

*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 39 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 2.9 inches)

### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

### **Typical Profile**

Ap—0 to 9 inches; very channery silt loam

Bw—9 to 20 inches; extremely channery silt loam

CB—20 to 29 inches; extremely channery silt loam

2R—29 to 80 inches; bedrock

### **Minor Components**

#### **Rock outcrop**

*Percent of map unit:* 1 percent

*Landform:* Ground moraines

*Aspect (representative):* North

*Aspect (range):* All aspects

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* Unranked

## **624832—Nassau-Rock outcrop complex, 35 to 60 percent slopes**

### **Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,550 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

### **Map Unit Composition**

Nassau and similar soils: 50 percent

Rock outcrop: 45 percent

Dissimilar minor components: 5 percent

### **Description of Nassau Soil**

#### **Soil Classification**

Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts

#### **Setting**

*Landscape:* Till plains



*Landform:* Ground moraines  
*Slope:* 35 to 60 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* High  
*Parent material:* Loamy till derived from acid shale  
*Restrictive feature(s):* Lithic bedrock at a depth of 10 to 20 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Somewhat excessively drained  
*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Very low (about 1.9 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7e  
*Hydric soil status:* No  
*Hydrologic soil group:* D

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material  
A—1 to 2 inches; very channery silt loam  
Bw—2 to 15 inches; extremely channery silt loam  
2R—15 to 80 inches; bedrock

**Description of Rock Outcrop**

**Setting**

*Landscape:* Till plains  
*Landform:* Ground moraines  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects

**Properties and Qualities**

*Parent material:* Acid shale  
*Restrictive feature(s):* Lithic bedrock at the surface  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Calcium carbonate equivalent (maximum weight percentage):* 0

**Interpretive Groups**

*Land capability classification (nonirrigated):* 8s  
*Hydric soil status:* Unranked  
*Hydrologic soil group:* D

**Typical Profile**

R—0 to 80 inches; bedrock

### ***Minor Components***

#### **Manlius**

*Percent of map unit:* 5 percent

*Landform:* Ground moraines

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 35 to 60 percent

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Hydric soil status:* No

## **624841—Oquaga-Rock outcrop complex, 35 to 60 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 695 to 1,800 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Oquaga and similar soils: 60 percent

Rock outcrop: 25 percent

Dissimilar minor components: 15 percent

### ***Description of Oquaga Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, superactive, mesic Typic Dystrudepts

#### **Setting**

*Landscape:* Mountains

*Landform:* Ground moraines

*Slope:* 35 to 60 percent

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* High

*Parent material:* Loamy till derived from sandstone and siltstone and/or loamy till derived from shale

*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 39 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Somewhat excessively drained

*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 2.5 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7e

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 4 inches; channery loam

Bw—4 to 20 inches; very channery loam

C—20 to 25 inches; extremely channery loam

2R—25 to 80 inches; bedrock

**Description of Rock Outcrop**

**Setting**

*Landscape:* Mountains

*Landform:* Ground moraines

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Aspect (representative):* North

*Aspect (range):* All aspects

**Properties and Qualities**

*Parent material:* Sandstone

*Restrictive feature(s):* Lithic bedrock at the surface

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Calcium carbonate equivalent (maximum weight percentage):* 0

**Interpretive Groups**

*Land capability classification (nonirrigated):* 8s

*Hydric soil status:* Unranked

*Hydrologic soil group:* D

**Typical Profile**

R—0 to 80 inches; bedrock

**Minor Components**

**Arnot**

*Percent of map unit:* 10 percent

*Landform:* Ground moraines

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 35 to 60 percent

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Hydric soil status:* No

**Lackawanna**

*Percent of map unit:* 5 percent

*Landform:* Ground moraines

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 35 to 60 percent

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Hydric soil status:* No

## **624845—Rock outcrop-Farmington-Galway complex, 15 to 35 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 900 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Rock outcrop: 45 percent

Farmington and similar soils: 35 percent

Galway and similar soils: 20 percent

### ***Description of Rock Outcrop***

#### **Setting**

*Landscape:* Till plains

*Landform:* Ground moraines

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

#### **Properties and Qualities**

*Parent material:* Limestone and dolomite

*Restrictive feature(s):* Lithic bedrock at the surface

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Calcium carbonate equivalent (maximum weight percentage):* 0

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 8s

*Hydric soil status:* Unranked

*Hydrologic soil group:* D

#### **Typical Profile**

R—0 to 80 inches; bedrock

### ***Description of Farmington Soil***

#### **Soil Classification**

Loamy, mixed, active, mesic Lithic Eutrudepts

#### **Setting**

*Landscape:* Till plains

*Landform:* Ground moraines

*Slope:* 15 to 35 percent

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very high

*Parent material:* Loamy till derived from limestone and dolomite

*Restrictive feature(s):* Lithic bedrock at a depth of 10 to 20 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 2.2 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* D

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 3 inches; silt loam

Bw1—3 to 9 inches; silt loam

Bw2—9 to 15 inches; silt loam

2R—15 to 80 inches; bedrock

***Description of Galway Soil***

**Soil Classification**

Coarse-loamy, mixed, superactive, mesic Typic Eutrudepts

**Setting**

*Landscape:* Till plains

*Landform:* Ground moraines

*Slope:* 15 to 35 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* High

*Parent material:* Coarse-loamy till derived from limestone and dolomite

*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 39 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 3.8 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

Oi—0 to 2 inches; slightly decomposed plant material

Oe—2 to 3 inches; moderately decomposed plant material

A—3 to 5 inches; loam

Bw1—5 to 15 inches; gravelly loam

Bw2—15 to 24 inches; gravelly loam

2R—24 to 80 inches; bedrock

## **624846—Rock outcrop-Arnot-Rubble land complex, 60 to 80 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,800 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Rock outcrop: 40 percent

Arnot and similar soils: 30 percent

Rubble land: 20 percent

Dissimilar minor components: 10 percent

### ***Description of Rock Outcrop***

#### **Setting**

*Landscape:* Mountains

*Landform:* Ground moraines

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

#### **Properties and Qualities**

*Parent material:* Conglomerate

*Restrictive feature(s):* Lithic bedrock at the surface

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Calcium carbonate equivalent (maximum weight percentage):* 0

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 8s

*Hydric soil status:* Unranked

*Hydrologic soil group:* D

#### **Typical Profile**

R—0 to 80 inches; bedrock

### ***Description of Arnot Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts

#### **Setting**

*Landscape:* Mountains

*Landform:* Ground moraines

*Slope:* 60 to 80 percent

*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very high  
*Parent material:* Loamy till derived from conglomerate  
*Restrictive feature(s):* Lithic bedrock at a depth of 10 to 20 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Somewhat excessively drained  
*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Very low (about 2.1 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s  
*Hydric soil status:* No  
*Hydrologic soil group:* D

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material  
A—1 to 2 inches; loam  
E—2 to 3 inches; fine sandy loam  
Bhs—3 to 4 inches; fine sandy loam  
Bw1—4 to 12 inches; very gravelly loam  
Bw2—12 to 17 inches; extremely gravelly loam  
2R—17 to 80 inches; bedrock

***Description of Rubble Land***

**Setting**

*Landscape:* Mountains  
*Landform:* Talus slopes  
*Slope:* 60 to 80 percent  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects

**Properties and Qualities**

*Runoff:* Low  
*Parent material:* Talus derived from conglomerate  
*Restrictive feature(s):* None within a depth of 60 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Excessively drained  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Very low (about 3.0 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 8s  
*Hydric soil status:* Unranked  
*Hydrologic soil group:* D



**Typical Profile**

C—0 to 60 inches; stones

**Minor Components**

**Lordstown**

*Percent of map unit:* 10 percent

*Landform:* Ground moraines

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 60 to 80 percent

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Hydric soil status:* No

**626816—Udifluvents, 0 to 3 percent slopes, occasionally flooded**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

**Map Unit Composition**

Udifluvents, occasionally flooded, and similar soils: 90 percent

Dissimilar minor components: 10 percent

**Description of Udifluvents, Occasionally Flooded**

**Soil Classification**

Udifluvents

**Setting**

*Landscape:* River valleys

*Landform:* Flood plains

*Landform position (three-dimensional):* Rise

*Slope:* 0 to 3 percent

*Down-slope shape:* Concave

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Low

*Parent material:* Coarse-loamy alluvium

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* Occasional

*Frequency of ponding:* None

*Depth to water table:* About 18 to 60 inches

*Drainage class:* Moderately well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 3.3 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 2w

*Hydric soil status:* No

*Hydrologic soil group:* A

**Typical Profile**

A—0 to 3 inches; loamy sand

C1—3 to 16 inches; loamy sand

C2—16 to 22 inches; sandy loam

C3—22 to 27 inches; sandy loam

C4—27 to 32 inches; sandy loam

C5—32 to 60 inches; stratified loamy sand to sandy loam

**Minor Components**

**Fluvaquents, occasionally flooded**

*Percent of map unit:* 10 percent

*Landform:* Flood plains

*Geomorphic position (three-dimensional):* Talf

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* Yes

**635458—Oquaga-Lackawanna complex, 8 to 15 percent slopes, very rocky**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 695 to 1,800 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

**Map Unit Composition**

Oquaga, very rocky, and similar soils: 55 percent

Lackawanna, very rocky, and similar soils: 30 percent

Dissimilar minor components: 15 percent

**Description of Oquaga, Very Rocky, Soil**

**Soil Classification**

Loamy-skeletal, mixed, superactive, mesic Typic Dystrudepts

**Setting**

*Landscape:* Mountains

*Landform:* Ground moraines

*Slope:* 8 to 15 percent

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Medium

*Parent material:* Loamy till derived from sandstone and siltstone and/or loamy till derived from shale

*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 39 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Somewhat excessively drained

*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 2.5 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 6s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 4 inches; channery loam

Bw—4 to 20 inches; very channery loam

C—20 to 25 inches; extremely channery loam

2R—25 to 80 inches; bedrock

***Description of Lackawanna, Very Rocky, Soil***

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

**Setting**

*Landscape:* Mountains

*Landform:* Ground moraines

*Slope:* 8 to 15 percent

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very high

*Parent material:* Coarse-loamy till derived from sandstone and siltstone and/or coarse-loamy till derived from shale

*Restrictive feature(s):* Fragipan at a depth of 14 to 36 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 6.9 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated): 7s*

*Hydric soil status: No*

*Hydrologic soil group: C*

**Vegetation**

*Existing plants: Red maple, sedge, rare clubmoss, and northern red oak*

**Typical Profile**

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 3 inches; cobbly fine sandy loam

E—3 to 7 inches; cobbly fine sandy loam

Bhs—7 to 8 inches; cobbly fine sandy loam

Bw1—8 to 16 inches; stony loam

Bw2—16 to 24 inches; stony loam

Bx1—24 to 29 inches; stony fine sandy loam

Bx2—29 to 60 inches; very cobbly fine sandy loam

**Minor Components**

**Rock outcrop**

*Percent of map unit: 10 percent*

*Landform: Ground moraines*

*Aspect (representative): North*

*Aspect (range): All aspects*

*Down-slope shape: Convex*

*Across-slope shape: Linear*

*Hydric soil status: Unranked*

**Wellsboro, very rocky**

*Percent of map unit: 5 percent*

*Landform: Ground moraines*

*Aspect (representative): North*

*Aspect (range): All aspects*

*Slope: 8 to 15 percent*

*Down-slope shape: Linear*

*Across-slope shape: Convex*

*Hydric soil status: No*

**635459—Oquaga-Lackawanna complex, 15 to 35 percent slopes, very rocky**

**Map Unit Setting**

*Major land resource area (MLRA): 140—Glaciated Allegheny Plateau and Catskill Mountains*

*Elevation: 695 to 1,800 feet*

*Mean annual precipitation: 30 to 64 inches*

*Mean annual air temperature: 46 to 79 degrees F*

*Frost-free period: 131 to 178 days*

**Map Unit Composition**

Oquaga, very rocky, and similar soils: 50 percent

Lackawanna, very rocky, and similar soils: 35 percent

Dissimilar minor components: 15 percent

***Description of Oquaga, Very Rocky, Soil***

**Soil Classification**

Loamy-skeletal, mixed, superactive, mesic Typic Dystrudepts

**Setting**

*Landscape:* Mountains

*Landform:* Ground moraines

*Slope:* 15 to 35 percent

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* High

*Parent material:* Loamy till derived from sandstone and siltstone and/or loamy till derived from shale

*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 39 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Somewhat excessively drained

*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 2.5 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 4 inches; channery loam

Bw—4 to 20 inches; very channery loam

C—20 to 25 inches; extremely channery loam

2R—25 to 80 inches; bedrock

***Description of Lackawanna, Very Rocky, Soil***

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

**Setting**

*Landscape:* Mountains

*Landform:* Ground moraines

*Slope:* 15 to 35 percent

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very high

## Soil Survey of Delaware Water Gap National Recreation Area

*Parent material:* Coarse-loamy till derived from sandstone and siltstone and/or coarse-loamy till derived from shale

*Restrictive feature(s):* Fragipan at a depth of 14 to 36 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 6.9 inches)

### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

### **Vegetation**

*Existing plants:* Red maple, sedge, rare clubmoss, and northern red oak

### **Typical Profile**

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 3 inches; cobbly fine sandy loam

E—3 to 7 inches; cobbly fine sandy loam

Bhs—7 to 8 inches; cobbly fine sandy loam

Bw1—8 to 16 inches; stony loam

Bw2—16 to 24 inches; stony loam

Bx1—24 to 29 inches; stony fine sandy loam

Bx2—29 to 60 inches; very cobbly fine sandy loam

### **Minor Components**

#### **Rock outcrop**

*Percent of map unit:* 10 percent

*Landform:* Ground moraines

*Aspect (representative):* North

*Aspect (range):* All aspects

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Hydric soil status:* Unranked

#### **Wellsboro, very rocky**

*Percent of map unit:* 5 percent

*Landform:* Ground moraines

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 0 to 15 percent

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Hydric soil status:* No

## **740953—Delaware fine sandy loam, 0 to 3 percent slopes, rarely flooded**

### **Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

## Soil Survey of Delaware Water Gap National Recreation Area

*Elevation:* 400 to 1,800 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

### **Map Unit Composition**

Delaware, rarely flooded, and similar soils: 80 percent

Dissimilar minor components: 20 percent

### **Description of Delaware, Rarely Flooded, Soil**

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Dystrudepts

#### **Setting**

*Landscape:* River valleys

*Landform:* Terraces

*Slope:* 0 to 3 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Very low

*Parent material:* Postglacial coarse-loamy alluvium

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* Rare

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.2 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 8.9 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 1

*Hydric soil status:* No

*Hydrologic soil group:* B

#### **Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

Ap1—1 to 4 inches; fine sandy loam

Ap2—4 to 11 inches; fine sandy loam

Bw1—11 to 20 inches; fine sandy loam

Bw2—20 to 33 inches; fine sandy loam

BC—33 to 41 inches; fine sandy loam

C1—41 to 56 inches; fine sandy loam

C2—56 to 60 inches; loam

### **Minor Components**

#### **Colonie**

*Percent of map unit:* 10 percent

*Landform:* Terraces

*Aspect (representative):* North

*Aspect (range):* All aspects



*Slope:* 0 to 3 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil status:* No

**Unadilla**

*Percent of map unit:* 10 percent  
*Landform:* Terraces  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 0 to 3 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil status:* No

**740968—Nassau-Manlius complex, 8 to 15 percent slopes, very rocky**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 400 to 1,550 feet  
*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

***Map Unit Composition***

Nassau, very rocky, and similar soils: 55 percent  
Manlius, very rocky, and similar soils: 44 percent  
Dissimilar minor components: 1 percent

***Description of Nassau, Very Rocky, Soil***

**Soil Classification**

Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts

**Setting**

*Landscape:* Till plains  
*Landform:* Ground moraines  
*Slope:* 8 to 15 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Medium  
*Parent material:* Loamy till derived from acid shale  
*Restrictive feature(s):* Lithic bedrock at a depth of 10 to 20 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Somewhat excessively drained

*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 1.7 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* D

**Typical Profile**

Ap—0 to 7 inches; very channery silt loam

Bw—7 to 13 inches; extremely channery silt loam

2R—13 to 80 inches; bedrock

***Description of Manlius, Very Rocky, Soil***

**Soil Classification**

Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

**Setting**

*Landscape:* Till plains

*Landform:* Ground moraines

*Slope:* 8 to 15 percent

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Medium

*Parent material:* Loamy till derived from acid shale

*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 39 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 2.9 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 6s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

Ap—0 to 9 inches; very channery silt loam

Bw—9 to 20 inches; extremely channery silt loam

CB—20 to 29 inches; extremely channery silt loam

2R—29 to 80 inches; bedrock

***Minor Components***

**Rock outcrop**

*Percent of map unit:* 1 percent

*Landform:* Ground moraines

*Aspect (representative):* North

*Aspect (range):* All aspects

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* Unranked

## **740969—Nassau-Manlius complex, 15 to 35 percent slopes, very rocky**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,550 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Nassau, very rocky, and similar soils: 55 percent

Manlius, very rocky, and similar soils: 44 percent

Dissimilar minor components: 1 percent

### ***Description of Nassau, Very Rocky, Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts

#### **Setting**

*Landscape:* Till plains

*Landform:* Ground moraines

*Slope:* 15 to 35 percent

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* High

*Parent material:* Loamy till derived from acid shale

*Restrictive feature(s):* Lithic bedrock at a depth of 10 to 20 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Somewhat excessively drained

*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 1.7 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* D

#### **Typical Profile**

Ap—0 to 7 inches; very channery silt loam

Bw—7 to 13 inches; extremely channery silt loam

2R—13 to 80 inches; bedrock

***Description of Manlius, Very Rocky, Soil***

**Soil Classification**

Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

**Setting**

*Landscape:* Till plains

*Landform:* Ground moraines

*Slope:* 15 to 35 percent

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* High

*Parent material:* Loamy till derived from acid shale

*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 39 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 2.9 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

Ap—0 to 9 inches; very channery silt loam

Bw—9 to 20 inches; extremely channery silt loam

CB—20 to 29 inches; extremely channery silt loam

2R—29 to 80 inches; bedrock

***Minor Components***

**Rock outcrop**

*Percent of map unit:* 1 percent

*Landform:* Ground moraines

*Aspect (representative):* North

*Aspect (range):* All aspects

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* Unranked

**740971—Oquaga-Lackawanna complex, 8 to 15 percent slopes, very rocky**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 695 to 1,800 feet  
*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

### **Map Unit Composition**

Oquaga, very rocky, and similar soils: 55 percent  
Lackawanna, very rocky, and similar soils: 30 percent  
Dissimilar minor components: 15 percent

### **Description of Oquaga, Very Rocky, Soil**

#### **Soil Classification**

Loamy-skeletal, mixed, superactive, mesic Typic Dystrudepts

#### **Setting**

*Landscape:* Mountains  
*Landform:* Ground moraines  
*Slope:* 8 to 15 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Medium  
*Parent material:* Loamy till derived from sandstone and siltstone and/or loamy till derived from shale  
*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 39 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Somewhat excessively drained  
*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Very low (about 2.5 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 6s  
*Hydric soil status:* No  
*Hydrologic soil group:* C

#### **Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material  
A—1 to 4 inches; channery loam  
Bw—4 to 20 inches; very channery loam  
C—20 to 25 inches; extremely channery loam  
2R—25 to 80 inches; bedrock

### **Description of Lackawanna, Very Rocky, Soil**

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landscape:* Mountains  
*Landform:* Ground moraines

*Slope*: 8 to 15 percent  
*Down-slope shape*: Linear  
*Across-slope shape*: Convex  
*Aspect (representative)*: North  
*Aspect (range)*: All aspects  
*Soil temperature regime*: Mesic  
*Soil moisture class*: Udic

#### **Properties and Qualities**

*Runoff*: Very high  
*Parent material*: Coarse-loamy till derived from sandstone and siltstone and/or coarse-loamy till derived from shale  
*Restrictive feature(s)*: Fragipan at a depth of 14 to 36 inches  
*Frequency of flooding*: None  
*Frequency of ponding*: None  
*Depth to water table*: More than 72 inches  
*Drainage class*: Well drained  
*Shrink-swell potential*: Low (about 0.1 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage)*: 0  
*Available water capacity*: Moderate (about 6.9 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated)*: 7s  
*Hydric soil status*: No  
*Hydrologic soil group*: C

#### **Vegetation**

*Existing plants*: Red maple, sedge, rare clubmoss, and northern red oak

#### **Typical Profile**

Oi—0 to 2 inches; slightly decomposed plant material  
A—2 to 3 inches; cobbly fine sandy loam  
E—3 to 7 inches; cobbly fine sandy loam  
Bhs—7 to 8 inches; cobbly fine sandy loam  
Bw1—8 to 16 inches; stony loam  
Bw2—16 to 24 inches; stony loam  
Bx1—24 to 29 inches; stony fine sandy loam  
Bx2—29 to 60 inches; very cobbly fine sandy loam

#### **Minor Components**

##### **Rock outcrop**

*Percent of map unit*: 10 percent  
*Landform*: Ground moraines  
*Aspect (representative)*: North  
*Aspect (range)*: All aspects  
*Down-slope shape*: Convex  
*Across-slope shape*: Linear  
*Hydric soil status*: Unranked

##### **Wellsboro, very rocky**

*Percent of map unit*: 5 percent  
*Landform*: Ground moraines  
*Aspect (representative)*: North  
*Aspect (range)*: All aspects  
*Slope*: 8 to 15 percent  
*Down-slope shape*: Linear

*Across-slope shape:* Convex

*Hydric soil status:* No

## **740972—Oquaga-Lackawanna complex, 15 to 35 percent slopes, very rocky**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 695 to 1,800 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Oquaga, very rocky, and similar soils: 50 percent

Lackawanna, very rocky, and similar soils: 35 percent

Dissimilar minor components: 15 percent

### ***Description of Oquaga, Very Rocky, Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, superactive, mesic Typic Dystrudepts

#### **Setting**

*Landscape:* Mountains

*Landform:* Ground moraines

*Slope:* 15 to 35 percent

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* High

*Parent material:* Loamy till derived from sandstone and siltstone and/or loamy till derived from shale

*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 39 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Somewhat excessively drained

*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 2.5 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

#### **Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 4 inches; channery loam



Bw—4 to 20 inches; very channery loam  
C—20 to 25 inches; extremely channery loam  
2R—25 to 80 inches; bedrock

***Description of Lackawanna, Very Rocky, Soil***

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

**Setting**

*Landscape:* Mountains

*Landform:* Ground moraines

*Slope:* 15 to 35 percent

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very high

*Parent material:* Coarse-loamy till derived from sandstone and siltstone and/or coarse-loamy till derived from shale

*Restrictive feature(s):* Fragipan at a depth of 14 to 36 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 6.9 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Vegetation**

*Existing plants:* Red maple, sedge, rare clubmoss, and northern red oak

**Typical Profile**

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 3 inches; cobbly fine sandy loam

E—3 to 7 inches; cobbly fine sandy loam

Bhs—7 to 8 inches; cobbly fine sandy loam

Bw1—8 to 16 inches; stony loam

Bw2—16 to 24 inches; stony loam

Bx1—24 to 29 inches; stony fine sandy loam

Bx2—29 to 60 inches; very cobbly fine sandy loam

***Minor Components***

**Rock outcrop**

*Percent of map unit:* 10 percent

*Landform:* Ground moraines

*Aspect (representative):* North

*Aspect (range):* All aspects

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Hydric soil status:* Unranked

**Wellsboro, very rocky**

*Percent of map unit:* 5 percent

*Landform:* Ground moraines

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 0 to 15 percent

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Hydric soil status:* No

## **740974—Oquaga-Rock outcrop complex, 35 to 60 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 695 to 1,800 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Oquaga and similar soils: 60 percent

Rock outcrop: 25 percent

Dissimilar minor components: 15 percent

### ***Description of Oquaga Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, superactive, mesic Typic Dystrudepts

#### **Setting**

*Landscape:* Mountains

*Landform:* Ground moraines

*Slope:* 35 to 60 percent

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* High

*Parent material:* Loamy till derived from sandstone and siltstone and/or loamy till derived from shale

*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 39 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Somewhat excessively drained

*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 2.5 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7e

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 4 inches; channery loam

Bw—4 to 20 inches; very channery loam

C—20 to 25 inches; extremely channery loam

2R—25 to 80 inches; bedrock

**Description of Rock Outcrop**

**Setting**

*Landscape:* Mountains

*Landform:* Ground moraines

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Aspect (representative):* North

*Aspect (range):* All aspects

**Properties and Qualities**

*Parent material:* Sandstone

*Restrictive feature(s):* Lithic bedrock at the surface

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Calcium carbonate equivalent (maximum weight percentage):* 0

**Interpretive Groups**

*Land capability classification (nonirrigated):* 8s

*Hydric soil status:* Unranked

*Hydrologic soil group:* D

**Typical Profile**

R—0 to 80 inches; bedrock

**Minor Components**

**Arnot**

*Percent of map unit:* 10 percent

*Landform:* Ground moraines

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 35 to 60 percent

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Hydric soil status:* No

**Lackawanna**

*Percent of map unit:* 5 percent

*Landform:* Ground moraines

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 35 to 60 percent

*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Hydric soil status:* No

## **740975—Rock outcrop-Arnot-Rubble land complex, 60 to 80 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 400 to 1,800 feet  
*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Rock outcrop: 40 percent  
Arnot and similar soils: 30 percent  
Rubble land: 20 percent  
Dissimilar minor components: 10 percent

### ***Description of Rock Outcrop***

#### **Setting**

*Landscape:* Mountains  
*Landform:* Ground moraines  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects

#### **Properties and Qualities**

*Parent material:* Conglomerate  
*Restrictive feature(s):* Lithic bedrock at the surface  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Calcium carbonate equivalent (maximum weight percentage):* 0

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 8s  
*Hydric soil status:* Unranked  
*Hydrologic soil group:* D

#### **Typical Profile**

R—0 to 80 inches; bedrock

### ***Description of Arnot Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts

#### **Setting**

*Landscape:* Mountains  
*Landform:* Ground moraines  
*Slope:* 60 to 80 percent  
*Down-slope shape:* Linear

*Across-slope shape*: Convex  
*Aspect (representative)*: North  
*Aspect (range)*: All aspects  
*Soil temperature regime*: Mesic  
*Soil moisture class*: Udic

**Properties and Qualities**

*Runoff*: Very high  
*Parent material*: Loamy till derived from conglomerate  
*Restrictive feature(s)*: Lithic bedrock at a depth of 10 to 20 inches  
*Frequency of flooding*: None  
*Frequency of ponding*: None  
*Depth to water table*: More than 72 inches  
*Drainage class*: Somewhat excessively drained  
*Shrink-swell potential*: Low (about 0.1 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage)*: 0  
*Available water capacity*: Very low (about 2.1 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated)*: 7s  
*Hydric soil status*: No  
*Hydrologic soil group*: D

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material  
A—1 to 2 inches; loam  
E—2 to 3 inches; fine sandy loam  
Bhs—3 to 4 inches; fine sandy loam  
Bw1—4 to 12 inches; very gravelly loam  
Bw2—12 to 17 inches; extremely gravelly loam  
2R—17 to 80 inches; bedrock

***Description of Rubble Land***

**Setting**

*Landscape*: Mountains  
*Landform*: Talus slopes  
*Slope*: 60 to 80 percent  
*Down-slope shape*: Concave  
*Across-slope shape*: Linear  
*Aspect (representative)*: North  
*Aspect (range)*: All aspects

**Properties and Qualities**

*Runoff*: Low  
*Parent material*: Talus derived from conglomerate  
*Restrictive feature(s)*: None within a depth of 60 inches  
*Frequency of flooding*: None  
*Frequency of ponding*: None  
*Depth to water table*: More than 72 inches  
*Drainage class*: Excessively drained  
*Calcium carbonate equivalent (maximum weight percentage)*: 0  
*Available water capacity*: Very low (about 3.0 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated)*: 8s  
*Hydric soil status*: Unranked  
*Hydrologic soil group*: D

**Typical Profile**

C—0 to 60 inches; stones

**Minor Components**

**Lordstown**

*Percent of map unit:* 10 percent

*Landform:* Ground moraines

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 60 to 80 percent

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Hydric soil status:* No

**740987—Scio silt loam, 0 to 3 percent slopes**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 95 to 1,000 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

**Map Unit Composition**

Scio and similar soils: 80 percent

Dissimilar minor components: 20 percent

**Description of Scio Soil**

**Soil Classification**

Coarse-silty, mixed, active, mesic Aquic Dystrudepts

**Setting**

*Landscape:* River valleys

*Landform:* Inner terraces

*Landform position (three-dimensional):* Tread

*Slope:* 0 to 3 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Low

*Parent material:* Postglacial coarse-silty alluvium

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 18 to 24 inches

*Drainage class:* Moderately well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very high (about 13.2 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 2w

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

Ap1—0 to 6 inches; silt loam

Ap2—6 to 13 inches; silt loam

Bw1—13 to 23 inches; silt loam

Bw2—23 to 28 inches; silt loam

BC—28 to 50 inches; silt loam

C1—50 to 59 inches; silt loam

C2—59 to 72 inches; silt loam

**Minor Components**

**Aeric Endoaquepts, postglacial alluvium**

*Percent of map unit:* 10 percent

*Landform:* Inner terraces

*Geomorphic position (three-dimensional):* Tread

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* No

**Unadilla**

*Percent of map unit:* 10 percent

*Landform:* Inner terraces

*Geomorphic position (three-dimensional):* Tread

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* No

**740988—Udifluvents, 0 to 3 percent slopes, occasionally flooded**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

**Map Unit Composition**

Udifluvents, occasionally flooded, and similar soils: 90 percent

Dissimilar minor components: 10 percent

**Description of Udifluvents, Occasionally Flooded**

**Soil Classification**

Udifluvents



**Setting**

*Landscape:* River valleys

*Landform:* Flood plains

*Landform position (three-dimensional):* Rise

*Slope:* 0 to 3 percent

*Down-slope shape:* Concave

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Low

*Parent material:* Coarse-loamy alluvium

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* Occasional

*Frequency of ponding:* None

*Depth to water table:* About 18 to 60 inches

*Drainage class:* Moderately well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 3.3 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 2w

*Hydric soil status:* No

*Hydrologic soil group:* A

**Typical Profile**

A—0 to 3 inches; loamy sand

C1—3 to 16 inches; loamy sand

C2—16 to 22 inches; sandy loam

C3—22 to 27 inches; sandy loam

C4—27 to 32 inches; sandy loam

C5—32 to 60 inches; stratified loamy sand to sandy loam

**Minor Components**

**Fluvaquents, occasionally flooded**

*Percent of map unit:* 10 percent

*Landform:* Flood plains

*Geomorphic position (three-dimensional):* Talf

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* Yes

**740991—Unadilla silt loam, 0 to 3 percent slopes**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,800 feet  
*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Unadilla and similar soils: 85 percent  
Dissimilar minor components: 15 percent

### ***Description of Unadilla Soil***

#### **Soil Classification**

Coarse-silty, mixed, active, mesic Typic Dystrudepts

#### **Setting**

*Landscape:* River valleys  
*Landform:* Inner terraces  
*Landform position (three-dimensional):* Tread  
*Slope:* 0 to 3 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Low  
*Parent material:* Postglacial coarse-silty alluvium  
*Restrictive feature(s):* None within a depth of 60 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* High (about 9.6 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 1  
*Hydric soil status:* No  
*Hydrologic soil group:* B

#### **Typical Profile**

Ap1—0 to 8 inches; silt loam  
Ap2—8 to 14 inches; silt loam  
Bw—14 to 25 inches; silt loam  
BC—25 to 39 inches; silt loam  
C—39 to 60 inches; very fine sandy loam

### ***Minor Components***

#### **Delaware**

*Percent of map unit:* 10 percent  
*Landform:* Inner terraces  
*Geomorphic position (three-dimensional):* Tread  
*Aspect (representative):* North  
*Aspect (range):* All aspects

*Slope:* 0 to 3 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil status:* No

**Colonie**

*Percent of map unit:* 5 percent  
*Landform:* Inner terraces  
*Geomorphic position (three-dimensional):* Tread  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 0 to 3 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil status:* No

**740992—Unadilla silt loam, 3 to 8 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 400 to 1,800 feet  
*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

***Map Unit Composition***

Unadilla and similar soils: 85 percent  
Dissimilar minor components: 15 percent

***Description of Unadilla Soil***

**Soil Classification**

Coarse-silty, mixed, active, mesic Typic Dystrudepts

**Setting**

*Landscape:* River valleys  
*Landform:* Inner terraces  
*Landform position (three-dimensional):* Riser  
*Slope:* 3 to 8 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Medium  
*Parent material:* Postglacial coarse-silty alluvium  
*Restrictive feature(s):* None within a depth of 60 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* High (about 9.6 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 2e

*Hydric soil status:* No

*Hydrologic soil group:* B

**Typical Profile**

Ap1—0 to 8 inches; silt loam

Ap2—8 to 14 inches; silt loam

Bw—14 to 25 inches; silt loam

BC—25 to 39 inches; silt loam

C—39 to 60 inches; very fine sandy loam

**Minor Components**

**Delaware**

*Percent of map unit:* 10 percent

*Landform:* Inner terraces

*Geomorphic position (three-dimensional):* Riser

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* No

**Colonie**

*Percent of map unit:* 5 percent

*Landform:* Inner terraces

*Geomorphic position (three-dimensional):* Tread

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* No

**740995—Wellsboro silt loam, 0 to 8 percent slopes,  
extremely stony**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 1,095 to 1,800 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

**Map Unit Composition**

Wellsboro, extremely stony, and similar soils: 85 percent

Dissimilar minor components: 15 percent

***Description of Wellsboro, Extremely Stony, Soil***

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

**Setting**

*Landscape:* Mountains

*Landform:* Ground moraines

*Slope:* 0 to 8 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very high

*Parent material:* Coarse-loamy till derived from shale and/or coarse-loamy till derived from sandstone and siltstone

*Restrictive feature(s):* Fragipan at a depth of 12 to 30 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 15 to 32 inches (perched)

*Drainage class:* Moderately well drained

*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 8.7 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

Ap—0 to 8 inches; silt loam

Bw1—8 to 15 inches; cobbly silt loam

Bw2—15 to 24 inches; cobbly loam

Bw3—24 to 29 inches; cobbly loam

Bx1—29 to 37 inches; cobbly sandy loam

Bx2—37 to 60 inches; cobbly sandy loam

***Minor Components***

**Morris, extremely stony**

*Percent of map unit:* 10 percent

*Landform:* Ground moraines

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* No

**Lackawanna, extremely stony**

*Percent of map unit:* 5 percent

*Landform:* Ground moraines

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* No

## **740996—Wellsboro silt loam, 8 to 15 percent slopes, extremely stony**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 1,095 to 1,800 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Wellsboro, extremely stony, and similar soils: 85 percent

Dissimilar minor components: 15 percent

### ***Description of Wellsboro, Extremely Stony, Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landscape:* Mountains

*Landform:* Ground moraines

*Slope:* 8 to 15 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Very high

*Parent material:* Coarse-loamy till derived from shale and/or coarse-loamy till derived from sandstone and siltstone

*Restrictive feature(s):* Fragipan at a depth of 12 to 30 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 15 to 32 inches (perched)

*Drainage class:* Moderately well drained

*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 8.7 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

Ap—0 to 8 inches; silt loam  
Bw1—8 to 15 inches; cobbly silt loam  
Bw2—15 to 24 inches; cobbly loam  
Bw3—24 to 29 inches; cobbly loam  
Bx1—29 to 37 inches; cobbly sandy loam  
Bx2—37 to 60 inches; cobbly sandy loam

**Minor Components**

**Morris, extremely stony**

*Percent of map unit:* 10 percent  
*Landform:* Ground moraines  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 0 to 15 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Hydric soil status:* No

**Lackawanna, extremely stony**

*Percent of map unit:* 5 percent  
*Landform:* Ground moraines  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 8 to 15 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Hydric soil status:* No

**741149—Lackawanna cobbly fine sandy loam, 8 to 15 percent slopes, extremely stony**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 695 to 1,800 feet  
*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

**Map Unit Composition**

Lackawanna, extremely stony, and similar soils: 85 percent  
Dissimilar minor components: 15 percent

**Description of Lackawanna, Extremely Stony, Soil**

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

**Setting**

*Landscape:* Mountains  
*Landform:* Ground moraines  
*Slope:* 8 to 15 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear



*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very high  
*Parent material:* Coarse-loamy till derived from sandstone and siltstone and/or coarse-loamy till derived from shale  
*Restrictive feature(s):* Fragipan at a depth of 14 to 36 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Moderate (about 6.9 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s  
*Hydric soil status:* No  
*Hydrologic soil group:* C

**Vegetation**

*Existing plants:* Red maple, sedge, rare clubmoss, and northern red oak

**Typical Profile**

Oi—0 to 2 inches; slightly decomposed plant material  
A—2 to 3 inches; cobbly fine sandy loam  
E—3 to 7 inches; cobbly fine sandy loam  
Bhs—7 to 8 inches; cobbly fine sandy loam  
Bw1—8 to 16 inches; stony loam  
Bw2—16 to 24 inches; stony loam  
Bx1—24 to 29 inches; stony fine sandy loam  
Bx2—29 to 60 inches; very cobbly fine sandy loam

**Minor Components**

**Wellsboro, extremely stony**

*Percent of map unit:* 10 percent  
*Landform:* Ground moraines  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 8 to 15 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil status:* No

**Oquaga, extremely stony**

*Percent of map unit:* 5 percent  
*Landform:* Ground moraines  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 8 to 15 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil status:* No

## **741150—Lackawanna cobbly fine sandy loam, 15 to 35 percent slopes, extremely stony**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 695 to 1,800 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Lackawanna, extremely stony, and similar soils: 85 percent

Dissimilar minor components: 15 percent

### ***Description of Lackawanna, Extremely Stony, Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landscape:* Mountains

*Landform:* Ground moraines

*Slope:* 15 to 35 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Very high

*Parent material:* Coarse-loamy till derived from sandstone and siltstone and/or coarse-loamy till derived from shale

*Restrictive feature(s):* Fragipan at a depth of 14 to 36 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 6.9 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

#### **Vegetation**

*Existing plants:* Red maple, sedge, rare clubmoss, and northern red oak

#### **Typical Profile**

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 3 inches; cobbly fine sandy loam

E—3 to 7 inches; cobbly fine sandy loam

Bhs—7 to 8 inches; cobbly fine sandy loam

Bw1—8 to 16 inches; stony loam  
Bw2—16 to 24 inches; stony loam  
Bx1—24 to 29 inches; stony fine sandy loam  
Bx2—29 to 60 inches; very cobbly fine sandy loam

### ***Minor Components***

#### **Wellsboro, extremely stony**

*Percent of map unit:* 10 percent  
*Landform:* Ground moraines  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 15 to 35 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil status:* No

#### **Oquaga, extremely stony**

*Percent of map unit:* 5 percent  
*Landform:* Ground moraines  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 15 to 35 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil status:* No

## **801114—Oquaga-Rock outcrop complex, 0 to 15 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 695 to 1,800 feet  
*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Oquaga and similar soils: 75 percent  
Rock outcrop: 15 percent  
Dissimilar minor components: 10 percent

### ***Description of Oquaga Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, superactive, mesic Typic Dystrudepts

#### **Setting**

*Landscape:* Mountains  
*Landform:* Ground moraines  
*Slope:* 0 to 15 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Aspect (representative):* North  
*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Medium

*Parent material:* Loamy till derived from sandstone and siltstone and/or loamy till derived from shale

*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 39 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Somewhat excessively drained

*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 2.5 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 3e

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 4 inches; channery loam

Bw—4 to 20 inches; very channery loam

C—20 to 25 inches; extremely channery loam

2R—25 to 80 inches; bedrock

**Description of Rock Outcrop**

**Setting**

*Landscape:* Mountains

*Landform:* Ground moraines

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Aspect (representative):* North

*Aspect (range):* All aspects

**Properties and Qualities**

*Parent material:* Sandstone

*Restrictive feature(s):* Lithic bedrock at the surface

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Calcium carbonate equivalent (maximum weight percentage):* 0

**Interpretive Groups**

*Land capability classification (nonirrigated):* 8s

*Hydric soil status:* Unranked

*Hydrologic soil group:* D

**Typical Profile**

R—0 to 80 inches; bedrock

**Minor Components**

**Arnot**

*Percent of map unit:* 5 percent

*Landform:* Ground moraines

*Aspect (representative):* North

*Aspect (range):* All aspects  
*Slope:* 0 to 15 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Hydric soil status:* No

**Wellsboro**

*Percent of map unit:* 5 percent  
*Landform:* Ground moraines  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 0 to 15 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Hydric soil status:* No

**810906—Oquaga-Rock outcrop complex, 0 to 15 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 695 to 1,800 feet  
*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

***Map Unit Composition***

Oquaga and similar soils: 75 percent  
Rock outcrop: 15 percent  
Dissimilar minor components: 10 percent

***Description of Oquaga Soil***

**Soil Classification**

Loamy-skeletal, mixed, superactive, mesic Typic Dystrudepts

**Setting**

*Landscape:* Mountains  
*Landform:* Ground moraines  
*Slope:* 0 to 15 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Medium  
*Parent material:* Loamy till derived from sandstone and siltstone and/or loamy till derived from shale  
*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 39 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches

*Drainage class:* Somewhat excessively drained  
*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Very low (about 2.5 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 3e  
*Hydric soil status:* No  
*Hydrologic soil group:* C

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material  
A—1 to 4 inches; channery loam  
Bw—4 to 20 inches; very channery loam  
C—20 to 25 inches; extremely channery loam  
2R—25 to 80 inches; bedrock

**Description of Rock Outcrop**

**Setting**

*Landscape:* Mountains  
*Landform:* Ground moraines  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Aspect (representative):* North  
*Aspect (range):* All aspects

**Properties and Qualities**

*Parent material:* Sandstone  
*Restrictive feature(s):* Lithic bedrock at the surface  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Calcium carbonate equivalent (maximum weight percentage):* 0

**Interpretive Groups**

*Land capability classification (nonirrigated):* 8s  
*Hydric soil status:* Unranked  
*Hydrologic soil group:* D

**Typical Profile**

R—0 to 80 inches; bedrock

**Minor Components**

**Arnot**

*Percent of map unit:* 5 percent  
*Landform:* Ground moraines  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 0 to 15 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Hydric soil status:* No

**Wellsboro**

*Percent of map unit:* 5 percent  
*Landform:* Ground moraines  
*Aspect (representative):* North  
*Aspect (range):* All aspects

*Slope:* 0 to 15 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Hydric soil status:* No

## **1147465—Alden silt loam, 0 to 8 percent slopes, extremely stony**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 400 to 1,800 feet  
*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Alden, extremely stony, and similar soils: 90 percent  
Dissimilar minor components: 10 percent

### ***Description of Alden, Extremely Stony, Soil***

#### **Soil Classification**

Fine-loamy, mixed, active, nonacid, mesic Mollic Endoaquepts

#### **Setting**

*Landscape:* Till plains  
*Landform:* Depressions  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Base slope  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Aquic

#### **Properties and Qualities**

*Runoff:* Low  
*Parent material:* Silty colluvium derived from sandstone over fine-loamy till derived from sandstone  
*Restrictive feature(s):* None within a depth of 60 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* Frequent  
*Depth to water table:* At the surface (perched)  
*Drainage class:* Very poorly drained  
*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* High (about 9.9 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s  
*Hydric soil status:* Yes  
*Hydrologic soil group:* D



**Typical Profile**

Oi—0 to 2 inches; slightly decomposed plant material  
A—2 to 7 inches; silt loam  
Bg1—7 to 14 inches; silt loam  
Bg2—14 to 28 inches; silty clay loam  
Bg3—28 to 43 inches; loam  
C—43 to 60 inches; silt loam

**Minor Components**

**Chippewa, extremely stony**

*Percent of map unit:* 10 percent  
*Landform:* Depressions  
*Geomorphic position (two-dimensional):* Toeslope  
*Geomorphic position (three-dimensional):* Base slope  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil status:* Yes

**1147467—Arnot-Lordstown complex, 0 to 15 percent slopes, very rocky**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 400 to 1,800 feet  
*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

**Map Unit Composition**

Arnot, very rocky, and similar soils: 55 percent  
Lordstown, very rocky, and similar soils: 40 percent  
Dissimilar minor components: 5 percent

**Description of Arnot, Very Rocky, Soil**

**Soil Classification**

Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts

**Setting**

*Landscape:* Mountains  
*Landform:* Ground moraines  
*Landform position (two-dimensional):* Summit  
*Landform position (three-dimensional):* Mountaintop  
*Slope:* 0 to 15 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Convex  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* High

*Parent material:* Loamy till derived from conglomerate

*Restrictive feature(s):* Lithic bedrock at a depth of 10 to 20 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Somewhat excessively drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 2.1 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* D

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; loam

E—2 to 3 inches; fine sandy loam

Bhs—3 to 4 inches; fine sandy loam

Bw1—4 to 12 inches; very gravelly loam

Bw2—12 to 17 inches; extremely gravelly loam

2R—17 to 80 inches; bedrock

***Description of Lordstown, Very Rocky, Soil***

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Dystrudepts

**Setting**

*Landscape:* Mountains

*Landform:* Ground moraines

*Landform position (two-dimensional):* Summit

*Landform position (three-dimensional):* Mountaintop

*Slope:* 0 to 15 percent

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Medium

*Parent material:* Coarse-loamy till derived from conglomerate

*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 39 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.6 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; loam

E—2 to 3 inches; fine sandy loam

Bw1—3 to 5 inches; loam

Bw2—5 to 17 inches; gravelly loam

Bw3—17 to 22 inches; gravelly loam

C—22 to 36 inches; very gravelly fine sandy loam

2R—36 to 80 inches; bedrock

**Minor Components**

**Rock outcrop**

*Percent of map unit:* 5 percent

*Landform:* Ground moraines

*Geomorphic position (two-dimensional):* Summit

*Geomorphic position (three-dimensional):* Mountaintop

*Aspect (representative):* North

*Aspect (range):* All aspects

*Down-slope shape:* Linear

*Across-slope shape:* Convex

*Hydric soil status:* Unranked

**1147468—Arnot-Lordstown-Rock outcrop complex, 15 to 35 percent slopes**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,800 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

**Map Unit Composition**

Arnot and similar soils: 45 percent

Lordstown and similar soils: 40 percent

Rock outcrop: 15 percent

**Description of Arnot Soil**

**Soil Classification**

Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts

**Setting**

*Landscape:* Mountains

*Landform:* Ground moraines

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Mountain flank

*Slope:* 15 to 35 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very high  
*Parent material:* Loamy till derived from conglomerate  
*Restrictive feature(s):* Lithic bedrock at a depth of 10 to 20 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Somewhat excessively drained  
*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Very low (about 2.1 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s  
*Hydric soil status:* No  
*Hydrologic soil group:* D

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material  
A—1 to 2 inches; loam  
E—2 to 3 inches; fine sandy loam  
Bhs—3 to 4 inches; fine sandy loam  
Bw1—4 to 12 inches; very gravelly loam  
Bw2—12 to 17 inches; extremely gravelly loam  
2R—17 to 80 inches; bedrock

***Description of Lordstown Soil***

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Dystrudepts

**Setting**

*Landscape:* Mountains  
*Landform:* Ground moraines  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Mountain flank  
*Slope:* 15 to 35 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* High  
*Parent material:* Coarse-loamy till derived from conglomerate  
*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 39 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.6 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; loam

E—2 to 3 inches; fine sandy loam

Bw1—3 to 5 inches; loam

Bw2—5 to 17 inches; gravelly loam

Bw3—17 to 22 inches; gravelly loam

C—22 to 36 inches; very gravelly fine sandy loam

2R—36 to 80 inches; bedrock

***Description of Rock Outcrop***

**Setting**

*Landscape:* Mountains

*Landform:* Ground moraines

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Mountain flank

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

**Properties and Qualities**

*Parent material:* Conglomerate

*Restrictive feature(s):* Lithic bedrock at the surface

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Calcium carbonate equivalent (maximum weight percentage):* 0

**Interpretive Groups**

*Land capability classification (nonirrigated):* 8s

*Hydric soil status:* Unranked

*Hydrologic soil group:* D

**Typical Profile**

R—0 to 80 inches; bedrock

**1147469—Arnot-Lordstown-Rock outcrop complex, 35 to 60 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,800 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Arnot and similar soils: 60 percent  
Lordstown and similar soils: 25 percent  
Rock outcrop: 15 percent

### ***Description of Arnot Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts

#### **Setting**

*Landscape:* Mountains  
*Landform:* Ground moraines  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Mountain flank  
*Slope:* 35 to 60 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Very high  
*Parent material:* Loamy till derived from conglomerate  
*Restrictive feature(s):* Lithic bedrock at a depth of 10 to 20 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Somewhat excessively drained  
*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Very low (about 2.1 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s  
*Hydric soil status:* No  
*Hydrologic soil group:* D

#### **Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material  
A—1 to 2 inches; loam  
E—2 to 3 inches; fine sandy loam  
Bhs—3 to 4 inches; fine sandy loam  
Bw1—4 to 12 inches; very gravelly loam  
Bw2—12 to 17 inches; extremely gravelly loam  
2R—17 to 80 inches; bedrock

### ***Description of Lordstown Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Dystrudepts

#### **Setting**

*Landscape:* Mountains  
*Landform:* Ground moraines  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Mountain flank

*Slope:* 35 to 60 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very high  
*Parent material:* Coarse-loamy till derived from conglomerate  
*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 39 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Low (about 4.6 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s  
*Hydric soil status:* No  
*Hydrologic soil group:* C

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material  
A—1 to 2 inches; loam  
E—2 to 3 inches; fine sandy loam  
Bw1—3 to 5 inches; loam  
Bw2—5 to 17 inches; gravelly loam  
Bw3—17 to 22 inches; gravelly loam  
C—22 to 36 inches; very gravelly fine sandy loam  
2R—36 to 80 inches; bedrock

**Description of Rock Outcrop**

**Setting**

*Landscape:* Mountains  
*Landform:* Ground moraines  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Mountain flank  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects

**Properties and Qualities**

*Parent material:* Conglomerate  
*Restrictive feature(s):* Lithic bedrock at the surface  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Calcium carbonate equivalent (maximum weight percentage):* 0

**Interpretive Groups**

*Land capability classification (nonirrigated):* 8s  
*Hydric soil status:* Unranked  
*Hydrologic soil group:* D



**Typical Profile**

R—0 to 80 inches; bedrock

**1147470—Atherton mucky silt loam, 0 to 3 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 49.2 to 1,499 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

***Map Unit Composition***

Atherton, very poorly drained, and similar soils: 60 percent

Atherton, poorly drained, and similar soils: 30 percent

Dissimilar minor components: 10 percent

***Description of Atherton, Very Poorly Drained, Soil***

**Soil Classification**

Fine-silty, mixed, active, nonacid, mesic Aeric Endoaquepts

**Setting**

*Landscape:* River valleys

*Landform:* Depressions

*Landform position (two-dimensional):* Toeslope

*Landform position (three-dimensional):* Tread

*Slope:* 0 to 3 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Aquic

**Properties and Qualities**

*Runoff:* Medium

*Parent material:* Postglacial fine-silty alluvium

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* Frequent

*Depth to water table:* At the surface (perched)

*Drainage class:* Very poorly drained

*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* High (about 10.6 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 3w

*Hydric soil status:* Yes

*Hydrologic soil group:* B/D

**Typical Profile**

Oi—0 to 2 inches; slightly decomposed plant material

Oe—2 to 4 inches; moderately decomposed plant material

A—4 to 8 inches; mucky silt loam  
Bg1—8 to 10 inches; silt loam  
Bg2—10 to 18 inches; silt loam  
Bg3—18 to 29 inches; silt loam  
BC1—29 to 32 inches; silt loam  
BC2—32 to 41 inches; silt loam  
C1—41 to 45 inches; fine sandy loam  
C2—45 to 50 inches; loam  
C3—50 to 60 inches; very fine sandy loam  
C4—60 to 70 inches; fine sandy loam

***Description of Atherton, Poorly Drained, Soil***

**Soil Classification**

Fine-silty, mixed, active, nonacid, mesic Aeric Endoaquepts

**Setting**

*Landscape:* River valleys  
*Landform:* Depressions  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Tread  
*Slope:* 0 to 3 percent  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Aquic

**Properties and Qualities**

*Runoff:* Medium  
*Parent material:* Postglacial fine-silty alluvium  
*Restrictive feature(s):* None within a depth of 60 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* At the surface to a depth of 6 inches (perched)  
*Drainage class:* Poorly drained  
*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Moderate (about 7.4 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 3w  
*Hydric soil status:* Yes  
*Hydrologic soil group:* B/D

**Typical Profile**

A—0 to 6 inches; loam  
Bg1—6 to 12 inches; loam  
Bg2—12 to 30 inches; loam  
2Cg1—30 to 40 inches; sandy clay loam  
2Cg2—40 to 60 inches; sandy clay loam

***Minor Components***

**Aeric Endoaquepts, postglacial alluvium**

*Percent of map unit:* 10 percent  
*Landform:* Inner terraces  
*Geomorphic position (two-dimensional):* Toeslope

*Geomorphic position (three-dimensional):* Tread

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* No

## **1147471—Catden mucky peat, 0 to 2 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,800 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Catden and similar soils: 85 percent

Dissimilar minor components: 15 percent

### ***Description of Catden Soil***

#### **Soil Classification**

Euic, mesic Typic Haplosaprists

#### **Setting**

*Landscape:* Till plains

*Landform:* Depressions

*Slope:* 0 to 3 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Aquic

#### **Properties and Qualities**

*Runoff:* Very low

*Parent material:* Herbaceous and/or woody organic material

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* Frequent

*Depth to water table:* At the surface (perched)

*Drainage class:* Very poorly drained

*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very high (about 26.8 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 5w

*Hydric soil status:* Yes

*Hydrologic soil group:* B/D

#### **Typical Profile**

Oe—0 to 2 inches; mucky peat

Oa1—2 to 13 inches; muck  
Oa2—13 to 20 inches; woody muck  
Oa3—20 to 32 inches; muck  
Oa4—32 to 60 inches; muck

### ***Minor Components***

#### **Alden**

*Percent of map unit:* 13 percent  
*Landform:* Depressions  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 0 to 3 percent  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil status:* Yes

#### **Wallkill**

*Percent of map unit:* 2 percent  
*Landform:* Flood plains  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 0 to 3 percent  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear  
*Hydric soil status:* Yes

## **1147474—Chippewa silt loam, 0 to 8 percent slopes, extremely stony**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 400 to 1,000 feet  
*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Chippewa, extremely stony, and similar soils: 80 percent  
Dissimilar minor components: 20 percent

### ***Description of Chippewa, Extremely Stony, Soil***

#### **Soil Classification**

Fine-loamy, mixed, active, mesic Typic Fragiaquepts

#### **Setting**

*Landscape:* Drumlin fields  
*Landform:* Interdrumlins  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Aquic

**Properties and Qualities**

*Runoff:* Very high

*Parent material:* Fine-loamy till derived from limestone, sandstone, and shale

*Restrictive feature(s):* Fragipan at a depth of 8 to 20 inches

*Frequency of flooding:* None

*Frequency of ponding:* Frequent

*Depth to water table:* At the surface (perched)

*Drainage class:* Poorly drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 3.4 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* Yes

*Hydrologic soil group:* D

**Typical Profile**

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 4 inches; silt loam

Eg—4 to 8 inches; silt loam

Bg—8 to 13 inches; silt loam

Bgx1—13 to 21 inches; silt loam

Bgx2—21 to 29 inches; silt loam

Cg1—29 to 34 inches; silt loam

Cg2—34 to 60 inches; fine sandy loam

**Minor Components**

**Alden, extremely stony**

*Percent of map unit:* 10 percent

*Landform:* Interdrumlins

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* Yes

**Venango, extremely stony**

*Percent of map unit:* 10 percent

*Landform:* Drumlins

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil status:* No

**1147475—Colonie loamy fine sand, 0 to 3 percent slopes**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,800 feet

*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Colonie and similar soils: 80 percent  
Dissimilar minor components: 20 percent

### ***Description of Colonie Soil***

#### **Soil Classification**

Mixed, mesic Lamellic Udipsamments

#### **Setting**

*Landscape:* River valleys  
*Landform:* Outer terraces  
*Slope:* 0 to 3 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Very low  
*Parent material:* Postglacial sandy alluvium, sandy eolian deposits, and/or glaciofluvial deposits  
*Restrictive feature(s):* None within a depth of 60 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Somewhat excessively drained  
*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Low (about 4.6 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 2s  
*Hydric soil status:* No  
*Hydrologic soil group:* A

#### **Typical Profile**

A—0 to 2 inches; loamy fine sand  
Ap—2 to 11 inches; loamy fine sand  
E—11 to 24 inches; fine sand  
E and Bt1—24 to 40 inches; fine sand  
E and Bt2—40 to 62 inches; fine sand

### ***Minor Components***

#### **Delaware**

*Percent of map unit:* 10 percent  
*Landform:* Outer terraces  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 0 to 3 percent  
*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* No

**Unadilla**

*Percent of map unit:* 10 percent

*Landform:* Outer terraces

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 0 to 3 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* No

**1147478—Delaware fine sandy loam, 3 to 8 percent slopes, rarely flooded**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,800 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

***Map Unit Composition***

Delaware, rarely flooded, and similar soils: 80 percent

Dissimilar minor components: 20 percent

***Description of Delaware, Rarely Flooded, Soil***

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Dystrudepts

**Setting**

*Landscape:* River valleys

*Landform:* Terraces

*Slope:* 3 to 8 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Low

*Parent material:* Postglacial coarse-loamy alluvium

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* Rare

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.2 percent linear extensibility)



*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 8.9 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 2e

*Hydric soil status:* No

*Hydrologic soil group:* B

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

Ap1—1 to 4 inches; fine sandy loam

Ap2—4 to 11 inches; fine sandy loam

Bw1—11 to 20 inches; fine sandy loam

Bw2—20 to 33 inches; fine sandy loam

BC—33 to 41 inches; fine sandy loam

C1—41 to 56 inches; fine sandy loam

C2—56 to 60 inches; loam

**Minor Components**

**Colonie**

*Percent of map unit:* 10 percent

*Landform:* Terraces

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* No

**Unadilla**

*Percent of map unit:* 10 percent

*Landform:* Terraces

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* No

**1147482—Fredon-Halsey complex, 0 to 3 percent slopes,  
very stony**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 800 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

**Map Unit Composition**

Fredon, very stony, and similar soils: 50 percent

Halsey, very stony, and similar soils: 40 percent

Dissimilar minor components: 10 percent

***Description of Fredon, Very Stony, Soil***

**Soil Classification**

Coarse-loamy over sandy or sandy-skeletal, mixed, active, nonacid, mesic Aeric  
Endoaquepts

**Setting**

*Landscape:* Outwash plains

*Landform:* Drainageways

*Slope:* 0 to 3 percent

*Down-slope shape:* Linear

*Across-slope shape:* Concave

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Aquic

**Properties and Qualities**

*Runoff:* Low

*Parent material:* Coarse-loamy over sandy and gravelly glaciofluvial deposits derived  
from limestone, sandstone, and shale

*Restrictive feature(s):* Strongly contrasting textural stratification at a depth of 22 to 40  
inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 6 to 18 inches (perched)

*Drainage class:* Somewhat poorly drained

*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 5.6 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 3w

*Hydric soil status:* No

*Hydrologic soil group:* D

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 8 inches; silt loam

Bw1—8 to 14 inches; silt loam

Bw2—14 to 18 inches; loam

Bw3—18 to 23 inches; loam

2C1—23 to 31 inches; extremely gravelly loamy coarse sand

2C2—31 to 36 inches; extremely gravelly coarse sand

2C3—36 to 45 inches; very gravelly coarse sand

2C4—45 to 55 inches; extremely gravelly coarse sand

2C5—55 to 60 inches; very gravelly coarse sand

***Description of Halsey, Very Stony, Soil***

**Soil Classification**

Coarse-loamy over sandy or sandy-skeletal, mixed, active, nonacid, mesic Typic  
Humaquepts

**Setting**

*Landscape:* Outwash plains

*Landform:* Drainageways

*Slope:* 0 to 3 percent

*Down-slope shape:* Linear

*Across-slope shape*: Concave  
*Aspect (representative)*: North  
*Aspect (range)*: All aspects  
*Soil temperature regime*: Mesic  
*Soil moisture class*: Aquic

**Properties and Qualities**

*Runoff*: Low  
*Parent material*: Coarse-loamy over sandy and gravelly glaciofluvial deposits derived from limestone, sandstone, and shale  
*Restrictive feature(s)*: Strongly contrasting textural stratification at a depth of 20 to 40 inches  
*Frequency of flooding*: None  
*Frequency of ponding*: Frequent  
*Depth to water table*: At the surface (perched)  
*Drainage class*: Very poorly drained  
*Shrink-swell potential*: Low (about 0.0 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage)*: 0  
*Available water capacity*: Low (about 5.7 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated)*: 5w  
*Hydric soil status*: Yes  
*Hydrologic soil group*: B/D

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material  
A1—1 to 5 inches; silt loam  
A2—5 to 11 inches; silt loam  
Bg—11 to 20 inches; silt loam  
2Cg1—20 to 25 inches; loamy sand  
2Cg2—25 to 35 inches; very gravelly coarse sand  
2Cg3—35 to 49 inches; very gravelly coarse sand  
2Cg4—49 to 56 inches; extremely gravelly coarse sand  
2Cg5—56 to 60 inches; extremely gravelly coarse sand

**Minor Components**

**Hero, very stony**

*Percent of map unit*: 10 percent  
*Landform*: Terraces  
*Aspect (representative)*: North  
*Aspect (range)*: All aspects  
*Slope*: 0 to 3 percent  
*Down-slope shape*: Linear  
*Across-slope shape*: Linear  
*Hydric soil status*: No

**1147485—Hazen-Hoosic complex, 3 to 8 percent slopes, very stony**

**Map Unit Setting**

*Major land resource area (MLRA)*: 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation*: 400 to 800 feet

*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

### **Map Unit Composition**

Hazen, very stony, and similar soils: 60 percent  
Hoosic, very stony, and similar soils: 35 percent  
Dissimilar minor components: 5 percent

### **Description of Hazen, Very Stony, Soil**

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Mollic Hapludalfs

#### **Setting**

*Landscape:* Outwash plains  
*Landform:* Valley trains  
*Slope:* 3 to 8 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Low  
*Parent material:* Coarse-loamy glaciofluvial deposits derived from limestone, sandstone, and shale  
*Restrictive feature(s):* None within a depth of 60 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Low (about 4.9 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 2e  
*Hydric soil status:* No  
*Hydrologic soil group:* B

#### **Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material  
Ap—1 to 10 inches; loam  
Bt—10 to 18 inches; sandy loam  
2C1—18 to 29 inches; very stony loamy coarse sand  
2C2—29 to 41 inches; very gravelly coarse sand  
2C3—41 to 60 inches; extremely gravelly coarse sand

### **Description of Hoosic, Very Stony, Soil**

#### **Soil Classification**

Sandy-skeletal, mixed, mesic Humic Dystrudepts

#### **Setting**

*Landscape:* Outwash plains

*Landform:* Valley trains  
*Slope:* 3 to 8 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very low  
*Parent material:* Glaciofluvial deposits derived from sandstone and shale  
*Restrictive feature(s):* None within a depth of 60 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Somewhat excessively drained  
*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Low (about 4.5 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 3s  
*Hydric soil status:* No  
*Hydrologic soil group:* B

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material  
Ap—1 to 9 inches; gravelly loam  
Bw—9 to 21 inches; very gravelly coarse sandy loam  
2C1—21 to 27 inches; extremely gravelly loamy coarse sand  
2C2—27 to 37 inches; extremely gravelly coarse sand  
2C3—37 to 49 inches; extremely gravelly coarse sand  
2C4—49 to 60 inches; extremely gravelly coarse sand

**Minor Components**

**Otisville, very stony**

*Percent of map unit:* 5 percent  
*Landform:* Valley trains  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 3 to 8 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil status:* No

**1147490—Hoosic-Hazen complex, 8 to 15 percent slopes,  
very stony**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 400 to 1,745 feet

*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Hoosic, very stony, and similar soils: 60 percent  
Hazen, very stony, and similar soils: 30 percent  
Dissimilar minor components: 10 percent

### ***Description of Hoosic, Very Stony, Soil***

#### **Soil Classification**

Sandy-skeletal, mixed, mesic Humic Dystrudepts

#### **Setting**

*Landscape:* Outwash plains  
*Landform:* Valley trains  
*Slope:* 8 to 15 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Very low  
*Parent material:* Glaciofluvial deposits derived from sandstone and shale  
*Restrictive feature(s):* None within a depth of 60 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Somewhat excessively drained  
*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Low (about 4.5 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 3e  
*Hydric soil status:* No  
*Hydrologic soil group:* B

#### **Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material  
Ap—1 to 9 inches; gravelly loam  
Bw—9 to 21 inches; very gravelly coarse sandy loam  
2C1—21 to 27 inches; extremely gravelly loamy coarse sand  
2C2—27 to 37 inches; extremely gravelly coarse sand  
2C3—37 to 49 inches; extremely gravelly coarse sand  
2C4—49 to 60 inches; extremely gravelly coarse sand

### ***Description of Hazen, Very Stony, Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Mollic Hapludalfs

#### **Setting**

*Landscape:* Outwash plains

*Landform*: Valley trains  
*Slope*: 8 to 15 percent  
*Down-slope shape*: Linear  
*Across-slope shape*: Linear  
*Aspect (representative)*: North  
*Aspect (range)*: All aspects  
*Soil temperature regime*: Mesic  
*Soil moisture class*: Udic

**Properties and Qualities**

*Runoff*: Low  
*Parent material*: Coarse-loamy glaciofluvial deposits derived from limestone, sandstone, and shale  
*Restrictive feature(s)*: None within a depth of 60 inches  
*Frequency of flooding*: None  
*Frequency of ponding*: None  
*Depth to water table*: More than 72 inches  
*Drainage class*: Well drained  
*Shrink-swell potential*: Low (about 0.1 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage)*: 0  
*Available water capacity*: Low (about 4.9 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated)*: 3e  
*Hydric soil status*: No  
*Hydrologic soil group*: B

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material  
Ap—1 to 10 inches; loam  
Bt—10 to 18 inches; sandy loam  
2C1—18 to 29 inches; very stony loamy coarse sand  
2C2—29 to 41 inches; very gravelly coarse sand  
2C3—41 to 60 inches; extremely gravelly coarse sand

***Minor Components***

**Colonie, very stony**

*Percent of map unit*: 5 percent  
*Landform*: Valley trains  
*Aspect (representative)*: North  
*Aspect (range)*: All aspects  
*Slope*: 8 to 15 percent  
*Down-slope shape*: Linear  
*Across-slope shape*: Linear  
*Hydric soil status*: No

**Otisville, very stony**

*Percent of map unit*: 5 percent  
*Landform*: Valley trains  
*Aspect (representative)*: North  
*Aspect (range)*: All aspects  
*Slope*: 8 to 15 percent  
*Down-slope shape*: Linear  
*Across-slope shape*: Linear  
*Hydric soil status*: No



## **1147491—Hoosic-Otisville complex, 25 to 60 percent slopes, very stony**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 800 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Hoosic, very stony, and similar soils: 50 percent

Otisville, very stony, and similar soils: 40 percent

Dissimilar minor components: 10 percent

### ***Description of Hoosic, Very Stony, Soil***

#### **Soil Classification**

Sandy-skeletal, mixed, mesic Humic Dystrudepts

#### **Setting**

*Landscape:* Outwash plains

*Landform:* Valley trains

*Slope:* 25 to 60 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Low

*Parent material:* Glaciofluvial deposits derived from sandstone and shale

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Somewhat excessively drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 4.5 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7e

*Hydric soil status:* No

*Hydrologic soil group:* B

#### **Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

Ap—1 to 9 inches; gravelly loam

Bw—9 to 21 inches; very gravelly coarse sandy loam

2C1—21 to 27 inches; extremely gravelly loamy coarse sand

2C2—27 to 37 inches; extremely gravelly coarse sand

2C3—37 to 49 inches; extremely gravelly coarse sand

2C4—49 to 60 inches; extremely gravelly coarse sand

### ***Description of Otisville, Very Stony, Soil***

#### **Soil Classification**

Sandy-skeletal, mixed, mesic Typic Udorthents

#### **Setting**

*Landscape:* Outwash plains

*Landform:* Valley trains

*Slope:* 25 to 60 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Low

*Parent material:* Glaciofluvial deposits derived from sandstone and shale

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Excessively drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 2.7 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* A

#### **Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; gravelly sandy loam

Bw1—2 to 7 inches; very gravelly loamy sand

Bw2—7 to 11 inches; very gravelly loamy coarse sand

BC—11 to 19 inches; very gravelly loamy coarse sand

C1—19 to 31 inches; extremely gravelly coarse sand

C2—31 to 43 inches; extremely gravelly coarse sand

C3—43 to 60 inches; stratified sand to loamy sand

### ***Minor Components***

#### **Hazen, very stony**

*Percent of map unit:* 10 percent

*Landform:* Valley trains

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 25 to 60 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* No

## **1147492—Lackawanna cobbly fine sandy loam, 0 to 8 percent slopes, extremely stony**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 695 to 1,800 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Lackawanna, extremely stony, and similar soils: 85 percent

Dissimilar minor components: 15 percent

### ***Description of Lackawanna, Extremely Stony, Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landscape:* Mountains

*Landform:* Ground moraines

*Slope:* 0 to 8 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* High

*Parent material:* Coarse-loamy till derived from shale and/or coarse-loamy till derived from sandstone and siltstone

*Restrictive feature(s):* Fragipan at a depth of 14 to 36 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 6.9 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

#### **Vegetation**

*Existing plants:* Red maple, sedge, rare clubmoss, and northern red oak

#### **Typical Profile**

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 3 inches; cobbly fine sandy loam

E—3 to 7 inches; cobbly fine sandy loam

Bhs—7 to 8 inches; cobbly fine sandy loam  
Bw1—8 to 16 inches; stony loam  
Bw2—16 to 24 inches; stony loam  
Bx1—24 to 29 inches; stony fine sandy loam  
Bx2—29 to 60 inches; very cobbly fine sandy loam

### ***Minor Components***

#### **Wellsboro, extremely stony**

*Percent of map unit:* 10 percent  
*Landform:* Ground moraines  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil status:* No

#### **Oquaga, extremely stony**

*Percent of map unit:* 5 percent  
*Landform:* Ground moraines  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil status:* No

## **1147500—Wurtsboro loam, 0 to 8 percent slopes, extremely stony**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 400 to 1,800 feet  
*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

### ***Map Unit Composition***

Wurtsboro, extremely stony, and similar soils: 90 percent  
Dissimilar minor components: 10 percent

### ***Description of Wurtsboro, Extremely Stony, Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

#### **Setting**

*Landscape:* Till plains  
*Landform:* Ground moraines  
*Slope:* 0 to 8 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very high

*Parent material:* Coarse-loamy till derived from sandstone

*Restrictive feature(s):* Fragipan at a depth of 17 to 28 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 15 to 26 inches (perched)

*Drainage class:* Moderately well drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 7.1 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 3 inches; loam

E—3 to 5 inches; fine sandy loam

Bhs—5 to 6 inches; fine sandy loam

Bw1—6 to 18 inches; sandy loam

Bw2—18 to 24 inches; gravelly sandy loam

Bx1—24 to 30 inches; gravelly sandy loam

Bx2—30 to 60 inches; gravelly sandy loam

**Minor Components**

**Swartswood, extremely stony**

*Percent of map unit:* 10 percent

*Landform:* Ground moraines

*Aspect (representative):* North

*Aspect (range):* All aspects

*Slope:* 0 to 8 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Hydric soil status:* No

**1147501—Wurtsboro-Swartswood complex, 0 to 8 percent slopes, extremely stony**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,100 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

**Map Unit Composition**

Wurtsboro, extremely stony, and similar soils: 60 percent

Swartswood, extremely stony, and similar soils: 40 percent

***Description of Wurtsboro, Extremely Stony, Soil***

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

**Setting**

*Landscape:* Till plains

*Landform:* Ground moraines

*Slope:* 0 to 8 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very high

*Parent material:* Bouldery, quartzose, coarse-loamy drift derived from conglomerate

*Restrictive feature(s):* Fragipan at a depth of 17 to 28 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 15 to 26 inches (perched)

*Drainage class:* Moderately well drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 7.1 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 3 inches; fine sandy loam

E—3 to 4 inches; fine sandy loam

Bhs—4 to 6 inches; fine sandy loam

Bw1—6 to 18 inches; sandy loam

Bw2—18 to 24 inches; gravelly sandy loam

Bx1—24 to 33 inches; gravelly sandy loam

Bx2—33 to 60 inches; gravelly sandy loam

***Description of Swartswood, Extremely Stony, Soil***

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

**Setting**

*Landscape:* Till plains

*Landform:* Ground moraines

*Slope:* 0 to 8 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very high

*Parent material:* Bouldery, quartzose, coarse-loamy drift derived from conglomerate

*Restrictive feature(s):* Fragipan at a depth of 20 to 36 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 5.6 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; loam

E—2 to 3 inches; fine sandy loam

Bhs—3 to 4 inches; gravelly fine sandy loam

Bw—4 to 21 inches; gravelly fine sandy loam

Bx1—21 to 32 inches; gravelly sandy loam

Bx2—32 to 60 inches; gravelly sandy loam

**1147502—Wurtsboro-Swartswood complex, 8 to 15 percent slopes, extremely stony**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,100 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

***Map Unit Composition***

Wurtsboro, extremely stony, and similar soils: 60 percent

Swartswood, extremely stony, and similar soils: 40 percent

***Description of Wurtsboro, extremely stony, Soil***

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

**Setting**

*Landscape:* Till plains

*Landform:* Ground moraines

*Slope:* 8 to 15 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects



*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very high

*Parent material:* Bouldery, quartzose, coarse-loamy drift derived from conglomerate

*Restrictive feature(s):* Fragipan at a depth of 17 to 28 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 15 to 26 inches (perched)

*Drainage class:* Moderately well drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 7.1 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

Oi—0 to 2 inches; slightly decomposed plant material

A—2 to 3 inches; fine sandy loam

E—3 to 4 inches; fine sandy loam

Bhs—4 to 6 inches; fine sandy loam

Bw1—6 to 18 inches; sandy loam

Bw2—18 to 24 inches; gravelly sandy loam

Bx1—24 to 33 inches; gravelly sandy loam

Bx2—33 to 60 inches; gravelly sandy loam

***Description of Swartswood, Extremely Stony, Soil***

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

**Setting**

*Landscape:* Till plains

*Landform:* Ground moraines

*Slope:* 8 to 15 percent

*Down-slope shape:* Convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very high

*Parent material:* Bouldery, quartzose, coarse-loamy drift derived from conglomerate

*Restrictive feature(s):* Fragipan at a depth of 20 to 36 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 5.6 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated): 7s*

*Hydric soil status: No*

*Hydrologic soil group: C*

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; loam

E—2 to 3 inches; fine sandy loam

Bhs—3 to 4 inches; gravelly fine sandy loam

Bw—4 to 21 inches; gravelly fine sandy loam

Bx1—21 to 32 inches; gravelly sandy loam

Bx2—32 to 60 inches; gravelly sandy loam

**1147527—Udorthents-Urban land complex, 0 to 8 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA): 140—Glaciated Allegheny Plateau and Catskill Mountains*

*Elevation: 400 to 1,495 feet*

*Mean annual precipitation: 30 to 64 inches*

*Mean annual air temperature: 46 to 79 degrees F*

*Frost-free period: 131 to 178 days*

***Map Unit Composition***

Udorthents and similar soils: 60 percent

Urban land: 40 percent

***Description of Udorthents***

**Soil Classification**

Udorthents

**Setting**

*Landscape: Uplands*

*Landform: Low hills*

*Slope: 0 to 8 percent*

*Down-slope shape: Linear*

*Across-slope shape: Linear*

*Aspect (representative): North*

*Aspect (range): All aspects*

*Soil temperature regime: Mesic*

*Soil moisture class: Udic*

**Properties and Qualities**

*Runoff: Medium*

*Parent material: Fill and/or disturbed soil material*

*Restrictive feature(s): None within a depth of 60 inches*

*Frequency of flooding: None*

*Frequency of ponding: None*

*Depth to water table: More than 72 inches*

*Drainage class: Well drained*

*Shrink-swell potential: Low (about 0.0 percent linear extensibility)*

*Calcium carbonate equivalent (maximum weight percentage): 0*

*Available water capacity: Moderate (about 8.4 inches)*

**Interpretive Groups**

*Land capability classification (nonirrigated):* 3w

*Hydric soil status:* No

*Hydrologic soil group:* D

**Typical Profile**

A—0 to 12 inches; loam

C—12 to 72 inches; loamy sand

**Description of Urban Land**

**Setting**

*Landscape:* Uplands

*Landform:* Low hills

*Landform position (three-dimensional):* Lower third of mountain flank

*Slope:* 0 to 3 percent

*Down-slope shape:* Linear, convex

*Across-slope shape:* Linear

*Aspect (representative):* North

*Aspect (range):* All aspects

**Properties and Qualities**

*Runoff:* Very high

*Parent material:* Buildings, pavement, and other impervious surfaces over fill and/or disturbed soil material

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Calcium carbonate equivalent (maximum weight percentage):* 0

**Interpretive Groups**

*Land capability classification (nonirrigated):* 8s

*Hydric soil status:* Unranked

*Hydrologic soil group:* D

**1147532—Udorthents, 0 to 8 percent slopes, smoothed**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 1,495 feet

*Mean annual precipitation:* 30 to 64 inches

*Mean annual air temperature:* 46 to 79 degrees F

*Frost-free period:* 131 to 178 days

**Map Unit Composition**

Udorthents and similar soils: 100 percent

**Description of Udorthents**

**Soil Classification**

Udorthents

**Setting**

*Landscape:* Uplands

*Landform:* Low hills

*Slope:* 0 to 8 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very low  
*Parent material:* Fill and/or disturbed soil material  
*Restrictive feature(s):* None within a depth of 60 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 0.0 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Moderate (about 8.4 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 3w  
*Hydric soil status:* No  
*Hydrologic soil group:* D

**Typical Profile**

A—0 to 12 inches; loam  
C—12 to 72 inches; loamy sand

**1147533—Wurtsboro-Swartswood complex, 15 to 35 percent slopes, extremely stony**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 400 to 1,100 feet  
*Mean annual precipitation:* 30 to 64 inches  
*Mean annual air temperature:* 46 to 79 degrees F  
*Frost-free period:* 131 to 178 days

***Map Unit Composition***

Wurtsboro, extremely stony, and similar soils: 80 percent  
Swartswood, extremely stony, and similar soils: 20 percent

***Description of Wurtsboro, Extremely Stony, Soil***

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

**Setting**

*Landscape:* Till plains  
*Landform:* Ground moraines  
*Slope:* 15 to 35 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Aspect (representative):* North

*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very high  
*Parent material:* Bouldery, quartzose, coarse-loamy drift derived from conglomerate  
*Restrictive feature(s):* Fragipan at a depth of 17 to 28 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* About 15 to 26 inches (perched)  
*Drainage class:* Moderately well drained  
*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Moderate (about 7.1 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7s  
*Hydric soil status:* No  
*Hydrologic soil group:* C

**Typical Profile**

Oi—0 to 2 inches; slightly decomposed plant material  
A—2 to 3 inches; fine sandy loam  
E—3 to 4 inches; fine sandy loam  
Bhs—4 to 6 inches; fine sandy loam  
Bw1—6 to 18 inches; sandy loam  
Bw2—18 to 24 inches; gravelly sandy loam  
Bx1—24 to 33 inches; gravelly sandy loam  
Bx2—33 to 60 inches; gravelly sandy loam

***Description of Swartswood, Extremely Stony, Soil***

**Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Fragiudepts

**Setting**

*Landscape:* Till plains  
*Landform:* Ground moraines  
*Slope:* 15 to 35 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Aspect (representative):* North  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Very high  
*Parent material:* Bouldery, quartzose, coarse-loamy drift derived from conglomerate  
*Restrictive feature(s):* Fragipan at a depth of 20 to 36 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 0.1 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Low (about 5.6 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated): 7s*

*Hydric soil status: No*

*Hydrologic soil group: C*

**Typical Profile**

Oi—0 to 1 inch; slightly decomposed plant material

A—1 to 2 inches; loam

E—2 to 3 inches; fine sandy loam

Bhs—3 to 4 inches; gravelly fine sandy loam

Bw—4 to 21 inches; gravelly fine sandy loam

Bx1—21 to 32 inches; gravelly sandy loam

Bx2—32 to 60 inches; gravelly sandy loam

**1948749—Arnot channery silt loam, 3 to 8 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA): 140—Glaciated Allegheny Plateau and Catskill Mountains*

*Elevation: 295 to 1,800 feet*

*Mean annual precipitation: 35 to 48 inches*

*Mean annual air temperature: 45 to 57 degrees F*

*Frost-free period: 110 to 190 days*

***Map Unit Composition***

Arnot and similar soils: 90 percent

Dissimilar minor components: 10 percent

***Description of Arnot Soil***

**Soil Classification**

Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts

**Setting**

*Landform: Valley sides*

*Landform position (two-dimensional): Backslope*

*Landform position (three-dimensional): Side slope, nose slope*

*Slope: 3 to 8 percent*

*Down-slope shape: Convex*

*Across-slope shape: Convex*

*Aspect (representative): Southeast*

*Aspect (range): All aspects*

*Soil temperature regime: Mesic*

*Soil moisture class: Udic*

**Properties and Qualities**

*Runoff: Medium*

*Parent material: Glacial till derived from sedimentary rock*

*Restrictive feature(s): Lithic bedrock at a depth of 10 to 20 inches*

*Frequency of flooding: None*

*Frequency of ponding: None*

*Depth to water table: More than 72 inches*

*Drainage class: Well drained*

*Shrink-swell potential: Low (about 1.5 percent linear extensibility)*

*Calcium carbonate equivalent (maximum weight percentage): 0*

*Available water capacity: Very low (about 1.9 inches)*

**Interpretive Groups**

*Land capability classification (nonirrigated):* 3s

*Hydric soil status:* No

*Hydrologic soil group:* C/D

**Typical Profile**

Ap—0 to 8 inches; channery silt loam

Bw—8 to 16 inches; very channery silt loam

2R—16 to 26 inches; bedrock

**Minor Components**

**Bedington**

*Percent of map unit:* 5 percent

*Landform:* Shale hillslopes

*Geomorphic position (two-dimensional):* Summit

*Geomorphic position (three-dimensional):* Interfluve

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Down-slope shape:* Convex, linear

*Across-slope shape:* Linear, convex

*Hydric soil status:* No

**Wurtsboro**

*Percent of map unit:* 5 percent

*Landform:* Hills

*Geomorphic position (two-dimensional):* Footslope

*Geomorphic position (three-dimensional):* Base slope

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* No

**1948750—Arnot channery silt loam, 8 to 15 percent slopes**

**Map Unit Setting**

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 295 to 1,800 feet

*Mean annual precipitation:* 35 to 48 inches

*Mean annual air temperature:* 45 to 57 degrees F

*Frost-free period:* 110 to 190 days

**Map Unit Composition**

Arnot and similar soils: 90 percent

Dissimilar minor components: 10 percent

**Description of Arnot Soil**

**Soil Classification**

Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts



### **Setting**

*Landform:* Valley sides

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope, nose slope

*Slope:* 8 to 15 percent

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

### **Properties and Qualities**

*Runoff:* Medium

*Parent material:* Glacial till derived from sedimentary rock

*Restrictive feature(s):* Lithic bedrock at a depth of 10 to 20 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 1.9 inches)

### **Interpretive Groups**

*Land capability classification (nonirrigated):* 4e

*Hydric soil status:* No

*Hydrologic soil group:* C/D

### **Typical Profile**

Ap—0 to 8 inches; channery silt loam

Bw—8 to 16 inches; very channery silt loam

2R—16 to 26 inches; bedrock

## **Minor Components**

### **Brinkerton**

*Percent of map unit:* 5 percent

*Landform:* Depressions

*Geomorphic position (two-dimensional):* Footslope

*Geomorphic position (three-dimensional):* Head slope

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 8 to 15 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* No

### **Wurtsboro**

*Percent of map unit:* 5 percent

*Landform:* Hills

*Geomorphic position (two-dimensional):* Footslope

*Geomorphic position (three-dimensional):* Base slope

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 8 to 15 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* No

## **1948751—Arnot channery silt loam, 15 to 25 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 295 to 1,800 feet

*Mean annual precipitation:* 35 to 48 inches

*Mean annual air temperature:* 45 to 57 degrees F

*Frost-free period:* 110 to 190 days

### ***Map Unit Composition***

Arnot and similar soils: 90 percent

Dissimilar minor components: 10 percent

### ***Description of Arnot Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts

#### **Setting**

*Landform:* Valley sides

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope, nose slope

*Slope:* 15 to 25 percent

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* High

*Parent material:* Glacial till derived from sedimentary rock

*Restrictive feature(s):* Lithic bedrock at a depth of 10 to 20 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 1.9 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 6e

*Hydric soil status:* No

*Hydrologic soil group:* C/D

#### **Typical Profile**

Ap—0 to 8 inches; channery silt loam

Bw—8 to 16 inches; very channery silt loam

2R—16 to 26 inches; bedrock

### ***Minor Components***

#### **Brinkerton**

*Percent of map unit:* 5 percent

*Landform:* Depressions

*Geomorphic position (two-dimensional):* Footslope

*Geomorphic position (three-dimensional):* Head slope

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 8 to 15 percent

*Down-slope shape:* Concave

*Across-slope shape:* Concave

*Hydric soil status:* No

#### **Wurtsboro**

*Percent of map unit:* 5 percent

*Landform:* Hills

*Geomorphic position (two-dimensional):* Footslope

*Geomorphic position (three-dimensional):* Base slope

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 8 to 15 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* No

## **1948774—Conotton gravelly loam, 3 to 8 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 620 to 905 feet

*Mean annual precipitation:* 32 to 45 inches

*Mean annual air temperature:* 48 to 54 degrees F

*Frost-free period:* 133 to 193 days

### ***Map Unit Composition***

Conotton and similar soils: 90 percent

### ***Description of Conotton Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, active, mesic Typic Hapludalfs

#### **Setting**

*Landscape:* Outwash plains

*Landform:* Stream terraces

*Landform position (two-dimensional):* Backslope, footslope

*Landform position (three-dimensional):* Riser, tread

*Slope:* 3 to 8 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Low

*Parent material:* Stratified sand and gravel outwash

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 5

*Available water capacity:* Low (about 5.4 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 2e

*Hydric soil status:* No

*Hydrologic soil group:* B

**Typical Profile**

Ap—0 to 9 inches; gravelly loam

Bt—9 to 45 inches; very gravelly loam

C—45 to 80 inches; stratified very gravelly sand to very gravelly loamy coarse sand

**1948775—Conotton gravelly loam, 8 to 15 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 620 to 905 feet

*Mean annual precipitation:* 32 to 45 inches

*Mean annual air temperature:* 48 to 54 degrees F

*Frost-free period:* 133 to 193 days

***Map Unit Composition***

Conotton and similar soils: 95 percent

***Description of Conotton Soil***

**Soil Classification**

Loamy-skeletal, mixed, active, mesic Typic Hapludalfs

**Setting**

*Landscape:* Outwash plains

*Landform:* Stream terraces

*Landform position (two-dimensional):* Backslope, footslope

*Landform position (three-dimensional):* Riser, tread

*Slope:* 8 to 15 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Low

*Parent material:* Stratified sand and gravel outwash

*Restrictive feature(s)*: None within a depth of 60 inches  
*Frequency of flooding*: None  
*Frequency of ponding*: None  
*Depth to water table*: More than 72 inches  
*Drainage class*: Well drained  
*Shrink-swell potential*: Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage)*: 5  
*Available water capacity*: Low (about 5.4 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated)*: 3e  
*Hydric soil status*: No  
*Hydrologic soil group*: B

**Typical Profile**

Ap—0 to 9 inches; gravelly loam  
Bt—9 to 45 inches; very gravelly loam  
C—45 to 80 inches; stratified very gravelly sand to very gravelly loamy coarse sand

**1948776—Conotton gravelly loam, 15 to 25 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA)*: 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation*: 620 to 905 feet  
*Mean annual precipitation*: 32 to 45 inches  
*Mean annual air temperature*: 48 to 54 degrees F  
*Frost-free period*: 133 to 193 days

***Map Unit Composition***

Conotton and similar soils: 95 percent

***Description of Conotton Soil***

**Soil Classification**

Loamy-skeletal, mixed, active, mesic Typic Hapludalfs

**Setting**

*Landscape*: Outwash plains  
*Landform*: Stream terraces  
*Landform position (two-dimensional)*: Backslope  
*Landform position (three-dimensional)*: Riser, tread  
*Slope*: 15 to 25 percent  
*Down-slope shape*: Linear  
*Across-slope shape*: Linear  
*Aspect (representative)*: Southeast  
*Aspect (range)*: All aspects  
*Soil temperature regime*: Mesic  
*Soil moisture class*: Udic

**Properties and Qualities**

*Runoff*: Medium  
*Parent material*: Stratified sand and gravel outwash  
*Restrictive feature(s)*: None within a depth of 60 inches  
*Frequency of flooding*: None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 5

*Available water capacity:* Low (about 5.4 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 6e

*Hydric soil status:* No

*Hydrologic soil group:* B

#### **Typical Profile**

Ap—0 to 9 inches; gravelly loam

Bt—9 to 45 inches; very gravelly loam

C—45 to 80 inches; stratified very gravelly sand to very gravelly loamy coarse sand

## **1948777—Conotton gravelly loam, 25 to 65 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 620 to 905 feet

*Mean annual precipitation:* 32 to 45 inches

*Mean annual air temperature:* 48 to 54 degrees F

*Frost-free period:* 133 to 193 days

### ***Map Unit Composition***

Conotton and similar soils: 95 percent

### ***Description of Conotton Soil***

#### **Soil Classification**

Loamy-skeletal, mixed, active, mesic Typic Hapludalfs

#### **Setting**

*Landscape:* Outwash plains

*Landform:* Stream terraces

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Riser, tread

*Slope:* 25 to 65 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Medium

*Parent material:* Stratified sand and gravel outwash

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 5

*Available water capacity:* Low (about 5.4 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 7e

*Hydric soil status:* No

*Hydrologic soil group:* B

**Typical Profile**

Ap—0 to 9 inches; gravelly loam

Bt—9 to 45 inches; very gravelly loam

C—45 to 80 inches; stratified very gravelly sand to very gravelly loamy coarse sand

**1948797—Manlius channery silt loam, 3 to 8 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 200 to 1,800 feet

*Mean annual precipitation:* 30 to 50 inches

*Mean annual air temperature:* 45 to 54 degrees F

*Frost-free period:* 110 to 200 days

***Map Unit Composition***

Manlius and similar soils: 90 percent

Dissimilar minor components: 10 percent

***Description of Manlius Soil***

**Soil Classification**

Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

**Setting**

*Landform:* Valley sides

*Landform position (two-dimensional):* Shoulder, backslope

*Landform position (three-dimensional):* Side slope, interfluvium, nose slope

*Slope:* 3 to 8 percent

*Down-slope shape:* Convex, linear

*Across-slope shape:* Linear, convex

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Medium

*Parent material:* Thin till derived from shale

*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 40 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)



*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Low (about 3.2 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 2s

*Hydric soil status:* No

*Hydrologic soil group:* C

**Typical Profile**

Ap—0 to 8 inches; channery silt loam

Bw—8 to 24 inches; very channery silt loam

C—24 to 32 inches; very channery silt loam

R—32 to 40 inches; bedrock

**Minor Components**

**Arnot**

*Percent of map unit:* 2 percent

*Landform:* Valley sides

*Geomorphic position (two-dimensional):* Backslope

*Geomorphic position (three-dimensional):* Side slope, nose slope

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil status:* No

**Conotton**

*Percent of map unit:* 2 percent

*Landform:* Stream terraces

*Geomorphic position (two-dimensional):* Toeslope

*Geomorphic position (three-dimensional):* Riser, tread

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* No

**Loudonville**

*Percent of map unit:* 2 percent

*Landform:* Till plains

*Geomorphic position (three-dimensional):* Head slope

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Hydric soil status:* No

**Swartswood**

*Percent of map unit:* 2 percent

*Landform:* Hills

*Geomorphic position (two-dimensional):* Backslope, footslope

*Geomorphic position (three-dimensional):* Side slope

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 3 to 8 percent  
*Down-slope shape:* Convex, linear  
*Across-slope shape:* Linear, convex  
*Hydric soil status:* No

**Wurtsboro**

*Percent of map unit:* 2 percent  
*Landform:* Hills  
*Geomorphic position (two-dimensional):* Footslope  
*Geomorphic position (three-dimensional):* Base slope  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 3 to 8 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil status:* No

**1948802—Manlius channery silt loam, 8 to 15 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 200 to 1,800 feet  
*Mean annual precipitation:* 30 to 50 inches  
*Mean annual air temperature:* 45 to 54 degrees F  
*Frost-free period:* 110 to 200 days

***Map Unit Composition***

Manlius and similar soils: 90 percent  
Dissimilar minor components: 10 percent

***Description of Manlius Soil***

**Soil Classification**

Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

**Setting**

*Landform:* Valley sides  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Slope:* 8 to 15 percent  
*Down-slope shape:* Convex, linear  
*Across-slope shape:* Linear, convex  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Medium  
*Parent material:* Thin till derived from shale  
*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 40 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches

*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Low (about 3.2 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 3e  
*Hydric soil status:* No  
*Hydrologic soil group:* C

**Typical Profile**

Ap—0 to 8 inches; channery silt loam  
Bw—8 to 24 inches; very channery silt loam  
C—24 to 32 inches; very channery silt loam  
R—32 to 40 inches; bedrock

**Minor Components**

**Arnot**

*Percent of map unit:* 2 percent  
*Landform:* Valley sides  
*Geomorphic position (two-dimensional):* Backslope  
*Geomorphic position (three-dimensional):* Side slope, nose slope  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 8 to 15 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil status:* No

**Conotton**

*Percent of map unit:* 2 percent  
*Landform:* Stream terraces  
*Geomorphic position (two-dimensional):* Toeslope  
*Geomorphic position (three-dimensional):* Riser, tread  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 8 to 15 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil status:* No

**Loudonville**

*Percent of map unit:* 2 percent  
*Landform:* Till plains  
*Geomorphic position (three-dimensional):* Head slope  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 8 to 15 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil status:* No

**Swartswood**

*Percent of map unit:* 2 percent  
*Landform:* Hills  
*Geomorphic position (two-dimensional):* Backslope, footslope  
*Geomorphic position (three-dimensional):* Side slope

*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 8 to 15 percent  
*Down-slope shape:* Convex, linear  
*Across-slope shape:* Linear, convex  
*Hydric soil status:* No

**Wurtsboro**

*Percent of map unit:* 2 percent  
*Landform:* Hills  
*Geomorphic position (two-dimensional):* Footslope  
*Geomorphic position (three-dimensional):* Base slope  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 8 to 15 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil status:* No

**1948818—Manlius channery silt loam, 15 to 25 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains  
*Elevation:* 200 to 1,800 feet  
*Mean annual precipitation:* 30 to 50 inches  
*Mean annual air temperature:* 45 to 54 degrees F  
*Frost-free period:* 110 to 200 days

***Map Unit Composition***

Manlius and similar soils: 90 percent  
Dissimilar minor components: 10 percent

***Description of Manlius Soil***

**Soil Classification**

Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

**Setting**

*Landform:* Valley sides  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Slope:* 15 to 25 percent  
*Down-slope shape:* Convex, linear  
*Across-slope shape:* Linear, convex  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Soil temperature regime:* Mesic  
*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* High  
*Parent material:* Thin till derived from shale  
*Restrictive feature(s):* Lithic bedrock at a depth of 20 to 40 inches  
*Frequency of flooding:* None

*Frequency of ponding:* None  
*Depth to water table:* More than 72 inches  
*Drainage class:* Well drained  
*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage):* 0  
*Available water capacity:* Low (about 3.2 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated):* 4e  
*Hydric soil status:* No  
*Hydrologic soil group:* C

**Typical Profile**

Ap—0 to 8 inches; channery silt loam  
Bw—8 to 24 inches; very channery silt loam  
C—24 to 32 inches; very channery silt loam  
R—32 to 40 inches; bedrock

**Minor Components**

**Arnot**

*Percent of map unit:* 2 percent  
*Landform:* Valley sides  
*Geomorphic position (two-dimensional):* Backslope  
*Geomorphic position (three-dimensional):* Side slope, nose slope  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 15 to 25 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil status:* No

**Conotton**

*Percent of map unit:* 2 percent  
*Landform:* Stream terraces  
*Geomorphic position (two-dimensional):* Toeslope  
*Geomorphic position (three-dimensional):* Riser, tread  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 15 to 25 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil status:* No

**Loudonville**

*Percent of map unit:* 2 percent  
*Landform:* Till plains  
*Geomorphic position (three-dimensional):* Head slope  
*Aspect (representative):* Southeast  
*Aspect (range):* All aspects  
*Slope:* 8 to 15 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil status:* No

**Swartswood**

*Percent of map unit:* 2 percent  
*Landform:* Hills

*Geomorphic position (two-dimensional):* Backslope, footslope

*Geomorphic position (three-dimensional):* Side slope

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 15 to 25 percent

*Down-slope shape:* Convex, linear

*Across-slope shape:* Linear, convex

*Hydric soil status:* No

**Wurtsboro**

*Percent of map unit:* 2 percent

*Landform:* Hills

*Geomorphic position (two-dimensional):* Footslope

*Geomorphic position (three-dimensional):* Base slope

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Slope:* 8 to 15 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Hydric soil status:* No

**1948832—Penargyl channery silt loam, 3 to 8 percent slopes**

***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 295 to 2,095 feet

*Mean annual precipitation:* 34 to 50 inches

*Mean annual air temperature:* 45 to 57 degrees F

*Frost-free period:* 130 to 190 days

***Map Unit Composition***

Penargyl and similar soils: 90 percent

***Description of Penargyl Soil***

**Soil Classification**

Fine-loamy, mixed, active, mesic Typic Hapludults

**Setting**

*Landscape:* Uplands

*Landform:* Valley sides

*Landform position (two-dimensional):* Backslope, footslope

*Landform position (three-dimensional):* Side slope

*Slope:* 3 to 8 percent

*Down-slope shape:* Concave, linear

*Across-slope shape:* Linear, concave

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

**Properties and Qualities**

*Runoff:* Medium

*Parent material:* Colluvium derived from shale and siltstone and/or loamy glacial till derived from sedimentary rock

*Restrictive feature(s):* Lithic bedrock at a depth of 72 to 99 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Drainage class:* Well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* High (about 10.7 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 2e

*Hydric soil status:* No

*Hydrologic soil group:* B

#### **Typical Profile**

Ap—0 to 12 inches; channery silt loam

Bt—12 to 74 inches; cobbly silty clay loam

C—74 to 80 inches; very channery loam

R—80 to 90 inches; bedrock

## **1948846—Phelps gravelly silt loam, 3 to 8 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 1,000 to 1,800 feet

*Mean annual precipitation:* 30 to 48 inches

*Mean annual air temperature:* 45 to 50 degrees F

*Frost-free period:* 110 to 200 days

### ***Map Unit Composition***

Phelps and similar soils: 90 percent

Dissimilar minor components: 10 percent

### ***Description of Phelps Soil***

#### **Soil Classification**

Fine-loamy over sandy or sandy-skeletal, mixed, active, mesic Glossaquic Hapludalfs

#### **Setting**

*Landscape:* Outwash plains

*Landform:* Terraces

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Tread

*Slope:* 3 to 8 percent

*Down-slope shape:* Concave, linear

*Across-slope shape:* Linear, concave

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Medium

*Parent material:* Silty or loamy over glacial outwash



*Restrictive feature(s)*: None within a depth of 60 inches  
*Frequency of flooding*: None  
*Frequency of ponding*: None  
*Depth to water table*: About 18 to 24 inches  
*Drainage class*: Moderately well drained  
*Shrink-swell potential*: Low (about 1.5 percent linear extensibility)  
*Calcium carbonate equivalent (maximum weight percentage)*: 0  
*Available water capacity*: Low (about 5.6 inches)

**Interpretive Groups**

*Land capability classification (nonirrigated)*: 2e  
*Hydric soil status*: No  
*Hydrologic soil group*: B

**Typical Profile**

Ap—0 to 10 inches; gravelly silt loam  
Bt—10 to 22 inches; gravelly loam  
BC—22 to 30 inches; gravelly clay loam  
2C—30 to 79 inches; stratified very gravelly sand to loamy sand

**Minor Components**

**Halsey**

*Percent of map unit*: 4 percent  
*Landform*: Flood plains  
*Geomorphic position (two-dimensional)*: Toeslope  
*Geomorphic position (three-dimensional)*: Tread  
*Aspect (representative)*: Southeast  
*Aspect (range)*: All aspects  
*Slope*: 0 to 2 percent  
*Down-slope shape*: Concave  
*Across-slope shape*: Concave  
*Hydric soil status*: Yes

**Swartswood**

*Percent of map unit*: 4 percent  
*Landform*: Hills  
*Geomorphic position (two-dimensional)*: Backslope, footslope  
*Geomorphic position (three-dimensional)*: Side slope  
*Aspect (representative)*: Southeast  
*Aspect (range)*: All aspects  
*Slope*: 3 to 8 percent  
*Down-slope shape*: Convex, linear  
*Across-slope shape*: Linear, convex  
*Hydric soil status*: No

**Wurtsboro**

*Percent of map unit*: 2 percent  
*Landform*: Hills  
*Geomorphic position (two-dimensional)*: Footslope  
*Geomorphic position (three-dimensional)*: Base slope  
*Aspect (representative)*: Southeast  
*Aspect (range)*: All aspects  
*Slope*: 3 to 8 percent  
*Down-slope shape*: Linear  
*Across-slope shape*: Linear  
*Hydric soil status*: No

## **1948855—Udorthents, loamy**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 295 to 1,600 feet

*Mean annual precipitation:* 34 to 50 inches

*Mean annual air temperature:* 45 to 57 degrees F

*Frost-free period:* 140 to 200 days

### ***Map Unit Composition***

Udorthents, loamy, and similar soils: 95 percent

Dissimilar minor components: 5 percent

### ***Description of Udorthents, Loamy***

#### **Soil Classification**

Udorthents

#### **Setting**

*Landscape:* Uplands

*Landform:* Ridges

*Landform position (two-dimensional):* Summit, shoulder, backslope

*Landform position (three-dimensional):* Nose slope, side slope, interfluvium

*Slope:* 0 to 8 percent

*Down-slope shape:* Linear, convex

*Across-slope shape:* Linear, convex

*Aspect (representative):* South

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Very high

*Parent material:* Graded areas of loamy sedimentary rock

*Restrictive feature(s):* None within a depth of 60 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* About 12 to 36 inches

*Drainage class:* Moderately well drained

*Shrink-swell potential:* Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Moderate (about 7.1 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 7s

*Hydric soil status:* No

*Hydrologic soil group:* A/D

#### **Typical Profile**

A—0 to 5 inches; loam

C—5 to 40 inches; gravelly loam

2C—40 to 70 inches; loam

### ***Minor Components***

#### **Bedington**

*Percent of map unit:* 1 percent

*Landform:* Shale hillslopes

*Geomorphic position (two-dimensional):* Summit  
*Geomorphic position (three-dimensional):* Interfluve  
*Aspect (representative):* South  
*Aspect (range):* All aspects  
*Slope:* 0 to 3 percent  
*Down-slope shape:* Convex, linear  
*Across-slope shape:* Linear, convex  
*Hydric soil status:* No

**Clarksburg**

*Percent of map unit:* 1 percent  
*Landform:* Limestone valley flats  
*Geomorphic position (two-dimensional):* Footslope, toeslope  
*Geomorphic position (three-dimensional):* Base slope  
*Aspect (representative):* South  
*Aspect (range):* All aspects  
*Slope:* 3 to 8 percent  
*Down-slope shape:* Concave, linear  
*Across-slope shape:* Linear, concave  
*Hydric soil status:* No

**Duffield**

*Percent of map unit:* 1 percent  
*Landform:* Hills  
*Geomorphic position (two-dimensional):* Summit  
*Geomorphic position (three-dimensional):* Interfluve  
*Aspect (representative):* South  
*Aspect (range):* All aspects  
*Slope:* 3 to 8 percent  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Hydric soil status:* No

**Lansdale**

*Percent of map unit:* 1 percent  
*Landform:* Rolling hillsides  
*Geomorphic position (two-dimensional):* Summit, shoulder, and backslope  
*Geomorphic position (three-dimensional):* Side slope  
*Aspect (representative):* South  
*Aspect (range):* All aspects  
*Slope:* 3 to 8 percent  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil status:* No

**Readington**

*Percent of map unit:* 1 percent  
*Landform:* Red shale, siltstone, and sandstone hillslopes  
*Geomorphic position (two-dimensional):* Backslope, footslope  
*Geomorphic position (three-dimensional):* Side slope, head slope, base slope  
*Aspect (representative):* South  
*Aspect (range):* All aspects  
*Slope:* 3 to 8 percent  
*Down-slope shape:* Linear, concave  
*Across-slope shape:* Linear, concave  
*Hydric soil status:* No

## **1948989—Urban land-Delaware complex, 0 to 8 percent slopes**

### ***Map Unit Setting***

*Major land resource area (MLRA):* 140—Glaciated Allegheny Plateau and Catskill Mountains

*Elevation:* 400 to 600 feet

*Mean annual precipitation:* 35 to 50 inches

*Mean annual air temperature:* 44 to 57 degrees F

*Frost-free period:* 110 to 200 days

### ***Map Unit Composition***

Urban land: 65 percent

Delaware and similar soils: 25 percent

### ***Description of Urban Land***

#### **Setting**

*Landscape:* Mountains

*Landform:* Valleys, ridges, and hills

*Landform position (two-dimensional):* Summit, footslope

*Slope:* 0 to 8 percent

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Aspect (representative):* Southeast

*Aspect (range):* All aspects

*Soil temperature regime:* Mesic

*Soil moisture class:* Udic

#### **Properties and Qualities**

*Runoff:* Very high

*Parent material:* Pavement, buildings, and other artificially covered areas

*Restrictive feature(s):* Lithic bedrock at a depth of 10 to 100 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Depth to water table:* More than 72 inches

*Calcium carbonate equivalent (maximum weight percentage):* 0

*Available water capacity:* Very low (about 0.0 inches)

#### **Interpretive Groups**

*Land capability classification (nonirrigated):* 8s

*Hydric soil status:* No

#### **Typical Profile**

C—0 to 6 inches; variable

### ***Description of Delaware Soil***

#### **Soil Classification**

Coarse-loamy, mixed, active, mesic Typic Dystrudepts

#### **Setting**

*Landscape:* River valleys

*Landform:* Low to middle river terraces

*Landform position (two-dimensional):* Backslope, footslope

*Landform position (three-dimensional):* Tread

*Slope:* 0 to 8 percent

*Down-slope shape:* Linear, convex

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*Across-slope shape*: Linear, convex

*Aspect (representative)*: South

*Aspect (range)*: All aspects

*Soil temperature regime*: Mesic

*Soil moisture class*: Udic

### **Properties and Qualities**

*Runoff*: Low

*Parent material*: Postglacial alluvium derived from sandstone and shale

*Restrictive feature(s)*: Lithic bedrock at a depth of 72 to 99 inches

*Frequency of flooding*: Rare

*Frequency of ponding*: None

*Depth to water table*: More than 72 inches

*Drainage class*: Well drained

*Shrink-swell potential*: Low (about 1.5 percent linear extensibility)

*Calcium carbonate equivalent (maximum weight percentage)*: 0

*Available water capacity*: High (about 9.3 inches)

### **Interpretive Groups**

*Land capability classification (nonirrigated)*: 2e

*Hydric soil status*: No

*Hydrologic soil group*: B

### **Typical Profile**

Ap—0 to 10 inches; loam

Bw—10 to 40 inches; very fine sandy loam

C—40 to 87 inches; loamy fine sand



# Use and Management of the Soils

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This soil survey is an inventory and evaluation of the soils in Delaware Water Gap National Recreation Area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils as rangeland and as sites for buildings, sanitary facilities, highways and other transportation systems, and recreational facilities. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the park. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, and trees and shrubs.

## Interpretive Ratings

The interpretive tables in this survey rate the soils in the park for various uses. Many of the tables identify the limitations that affect specified uses and indicate the severity of those limitations. The ratings in these tables are both verbal and numerical.

## Rating Class Terms

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited by all of the soil features that affect a specified use or in terms that indicate the suitability of the soils for the use. Thus, the tables may show limitation classes or suitability classes. Terms for the limitation classes are *not limited*, *slightly limited*, *somewhat limited*, and *very limited*. The suitability ratings are expressed as *well suited*, *moderately well suited*, *poorly suited*, and *unsuited* or as *good*, *fair*, and *poor*.

## Numerical Ratings

Numerical ratings in the tables indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact



on the use and the point at which the soil feature is not a limitation. The limitations appear in order from the most limiting to the least limiting. Thus, if more than one limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

## Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, for forestland, or for engineering purposes.

In the capability system, soils are generally grouped at three levels=capability class, subclass, and unit (USDA–SCS, 1961).

*Capability classes*, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have slight limitations that restrict their use.

Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

*Capability subclasses* are soil groups within one class. They are designated by adding a small letter, *e*, *w*, *s*, or *c*, to the class numeral, for example, 2*e*. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c*, used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w*, *s*, or *c* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, rangeland, forestland, wildlife habitat, or recreation.

*Capability units* are soil groups within a subclass. The soils in a capability unit are enough alike to be suited to the same crops and pasture plants, to require similar management, and to have similar productivity. Capability units are generally

designated by adding an Arabic numeral to the subclass symbol, for example, 2e-4. These units are not given in all soil surveys.

The capability classification of map units in this park is given in the section "Detailed Soil Map Units" and in table 2.

## Prime Farmland and Other Important Farmlands

Table 3 lists the map units in the park that are considered important farmlands. Important farmlands consist of prime farmland, unique farmland, and farmland of statewide or local importance. This list does not constitute a recommendation for a particular land use.

In an effort to identify the extent and location of important farmlands, the Natural Resources Conservation Service, in cooperation with other interested Federal, State, and local government organizations, has inventoried land that can be used for the production of the Nation's food supply.

*Prime farmland* is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil quality, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. The water supply is dependable and of adequate quality. Prime farmland is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

A recent trend in land use in some areas has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

*Unique farmland* is land other than prime farmland that is used for the production of specific high-value food and fiber crops, such as citrus, tree nuts, olives, cranberries, and other fruits and vegetables. It has the special combination of soil quality, growing season, moisture supply, temperature, humidity, air drainage, elevation, and aspect needed for the soil to economically produce sustainable high yields of these crops when properly managed. The water supply is dependable and of adequate quality. Nearness to markets is an additional consideration. Unique farmland is not based on national criteria. It commonly is in areas where there is a special microclimate, such as the wine country in California.

In some areas, land that does not meet the criteria for prime farmland or unique farmland is considered to be *farmland of statewide importance* for the production of food, feed, fiber, forage, and oilseed crops. The criteria for defining and delineating farmland of statewide importance are determined by the appropriate State agencies. Generally, this land includes areas of soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated

and managed according to acceptable farming methods. Some areas may produce as high a yield as prime farmland if conditions are favorable. Farmland of statewide importance may include tracts of land that have been designated for agriculture by State law.

In some areas that are not identified as having national or statewide importance, land is considered to be *farmland of local importance* for the production of food, feed, fiber, forage, and oilseed crops. This farmland is identified by the appropriate local agencies. Farmland of local importance may include tracts of land that have been designated for agriculture by local ordinance.

## Hydric Soils

Table 4 lists the map unit components that are rated as hydric soils in the park. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; USDA–NRCS, 2010).

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in “Soil Taxonomy” (Soil Survey Staff, 1999) and “Keys to Soil Taxonomy” (Soil Survey Staff, 2010) and in the “Soil Survey Manual” (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in “Field Indicators of Hydric Soils in the United States” (USDA–NRCS, 2010).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The criteria for hydric soils are represented by codes in the table (for example, 2B3). Definitions for the codes are as follows:

1. All Histels except for Folistels and Histosols except for Folistels.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
  - A. are somewhat poorly drained and have a water table at the surface (0.0 feet) during the growing season, or
  - B. are poorly drained or very poorly drained and have either:
    - 1) a water table at the surface (0.0 feet) during the growing season if textures are coarse sand, sand, or fine sand in all layers within a depth of 20 inches, or
    - 2) a water table at a depth of 0.5 foot or less during the growing season if saturated hydraulic conductivity (Ksat) is equal to or greater than 6.0 in/hr in all layers within a depth of 20 inches, or
    - 3) a water table at a depth of 1.0 foot or less during the growing season if saturated hydraulic conductivity (Ksat) is less than 6.0 in/hr in any layer within a depth of 20 inches.
3. Soils that are frequently ponded for periods of long or very long duration during the growing season.
4. Soils that are frequently flooded for periods of long or very long duration during the growing season.

## Landscape, Landform, and Parent Material

Table 5 displays information about the relationships between soils and landscapes, landforms, and parent materials.

*Percent of map unit* is the extent of the named soil in the map unit.

*Slope* is the inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. The table shows the low and high range of slope for the named component or soil.

*Elevation* is the height of an object or area on the earth's surface in reference to a fixed reference point, such as mean sea level. The typical low and high range of elevation is displayed for each soil.

*MAP* is the mean annual precipitation for areas of the soil in the map unit.

*Landscape* refers to the broad shape of the earth in the area where the soil occurs. Examples are a valley and a mountain.

*Landform* is a specific shape of the earth in the area where a soil typically occurs. Examples are a valley bottom and a mountain summit.

*Parent material* is the material in which soils formed. Examples are the underlying geological material (including bedrock), a surficial deposit (such as eolian sand), and organic material. Soils inherit their chemical and physical properties from the parent material.

## Land Management

In tables 6a through 6d, interpretive ratings are given for various aspects of land management. The ratings are both verbal and numerical.

Some rating class terms indicate the degree to which the soils are suited to a specified land management practice. *Well suited* indicates that the soil has features that are favorable for the specified practice and has no limitations. Good performance can be expected, and little or no maintenance is needed. *Moderately suited* indicates that the soil has features that are moderately favorable for the specified practice. One

or more soil properties are less than desirable, and fair performance can be expected. Some maintenance is needed. *Poorly suited* indicates that the soil has one or more properties that are unfavorable for the specified practice. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration. *Unsuited* indicates that the expected performance of the soil is unacceptable for the specified practice or that extreme measures are needed to overcome the undesirable soil properties.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the specified land management practice (1.00) and the point at which the soil feature is not a limitation (0.00).

Rating class terms for *fire damage* and *seedling mortality* are expressed as low, moderate, and high. Where these terms are used, the numerical ratings indicate gradations between the point at which the potential for fire damage or seedling mortality is highest (1.00) and the point at which the potential is lowest (0.00).

Rating class terms for *hazard of erosion* are expressed as slight, moderate, severe, and very severe. Where these terms are used, the numerical ratings indicate gradations between the point at which the potential for erosion is highest (1.00) and the point at which the potential is lowest (0.00).

The paragraphs that follow indicate the soil properties considered in rating the soils for land management practices.

#### Table 6a

Ratings in the columns *suitability for hand planting* and *suitability for mechanical planting* are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, moderately suited, poorly suited, or unsuited to these methods of planting. It is assumed that necessary site preparation is completed before seedlings are planted.

Ratings in the column *soil rutting hazard* are based on depth to a water table, rock fragments on or below the surface, the Unified classification, depth to a restrictive layer, and slope. Ruts form as a result of the operation of planting equipment. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that the soil is subject to little or no rutting, *moderate* indicates that rutting is likely, and *severe* indicates that ruts form readily.

#### Table 6b

Ratings in the column *hazard of erosion* are based on slope and on soil erodibility factor K. The soil loss is caused by sheet or rill erosion in areas where 50 to 75 percent of the surface has been exposed by different kinds of disturbance. The hazard is described as slight, moderate, severe, or very severe. A rating of *slight* indicates that erosion is unlikely under ordinary climatic conditions; *moderate* indicates that some erosion is likely and that erosion-control measures may be needed; *severe* indicates that erosion is very likely and that erosion-control measures, including revegetation of bare areas, are advised; and *very severe* indicates that significant erosion is expected, loss of soil productivity and off-site damage are likely, and erosion-control measures are costly and generally impractical.

Ratings in the column *hazard of erosion on roads and trails* are based on the soil erodibility factor K, slope, and content of rock fragments. The ratings apply to unsurfaced roads and trails. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that little or no erosion is likely; *moderate* indicates that some erosion is likely, that the roads or trails may require occasional maintenance, and that simple erosion-control measures are needed; and *severe* indicates that significant



erosion is expected, that the roads or trails require frequent maintenance, and that costly erosion-control measures are needed.

Ratings in the column *suitability for roads (natural surface)* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The ratings indicate the suitability for using the natural surface of the soil for roads. The soils are described as well suited, moderately suited, or poorly suited to this use.

#### Table 6c

Ratings in the column *suitability for mechanical site preparation (deep)* are based on slope, depth to a restrictive layer, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 3 feet is considered in the ratings.

Ratings in the column *suitability for mechanical site preparation (surface)* are based on slope, depth to a restrictive layer, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 1 foot is considered in the ratings.

#### Table 6d

Ratings in the column *potential for damage to soil by fire* are based on texture of the surface layer, content of rock fragments and organic matter in the surface layer, thickness of the surface layer, and slope. The soils are described as having a low, moderate, or high potential for this kind of damage. The ratings indicate an evaluation of the potential impact of prescribed fires or wildfires that are intense enough to remove the duff layer and consume organic matter in the surface layer.

Ratings in the column *potential for seedling mortality* are based on flooding, ponding, depth to a water table, content of lime, reaction, salinity, available water capacity, soil moisture regime, soil temperature regime, aspect, and slope. The soils are described as having a low, moderate, or high potential for seedling mortality.

## Recreation

The soils of the park are rated in tables 7a and 7b according to limitations that affect their suitability for recreation. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The ratings in the tables are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public

sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

The information in the tables can be supplemented by other information in this survey, for example, interpretations for building site development, construction materials, and water management.

**Table 7a**

*Camp areas* require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or a cemented pan are the main concerns affecting the development of camp areas. The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

*Picnic areas* are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

**Table 7b**

*Foot traffic and equestrian trails* for hiking and horseback riding should require little or no slope modification through cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

*Mountain bike and off-road vehicle trails* require little or no site preparation. They are not covered with surfacing material or vegetation. Considerable compaction of the soil material is likely. The ratings are based on the soil properties that influence erodibility, trafficability, dustiness, and the ease of revegetation. These properties are stoniness, depth to a water table, ponding, slope, flooding, and texture of the surface layer.

## Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, landscaping, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the estimated data and test data in the "Soil Properties" section.



*Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.*

*The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.*

*Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.*

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface, soil wetness, depth to a water table, ponding, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for septic tank absorption fields and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, ponds, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil map, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

## **Dwellings and Small Commercial Buildings**

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Table 8 shows the degree and kind of soil limitations that affect dwellings and small commercial buildings.

The ratings in the table are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

*Dwellings* are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

*Small commercial buildings* are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

## **Roads and Streets, Shallow Excavations, and Landscaping**

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Table 9 shows the degree and kind of soil limitations that affect local roads and streets, shallow excavations, and landscaping.

The ratings in the table are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

*Local roads and streets* have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of

flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

*Shallow excavations* are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

*Landscaping* requires soils on which turf, trees, and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

## Sewage Disposal

Table 10 shows the degree and kind of soil limitations that affect septic tank absorption fields and sewage lagoons. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

*Septic tank absorption fields* are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches or between a depth of 24 inches and a restrictive layer is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Saturated hydraulic conductivity (Ksat), depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

*Sewage lagoons* are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, saturated hydraulic conductivity (Ksat), depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Saturated hydraulic conductivity (Ksat) is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a Ksat rate of more than 14 micrometers per second are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

## Source of Gravel and Sand

Table 11 gives information about the soils as potential sources of gravel and sand. Normal compaction, minor processing, and other standard construction practices are assumed.

*Gravel* and *sand* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. Only the likelihood of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of gravel or sand are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains gravel or sand, the soil is considered a likely source regardless of thickness. The assumption is that the gravel or sand layer below the depth of observation exceeds the minimum thickness. The ratings are for the whole soil, from the surface to a depth of about 6 feet.

The soils are rated *good*, *fair*, or *poor* as potential sources of gravel and sand. A rating of *good* or *fair* means that the source material is likely to be in or below the soil. The bottom layer and the thickest layer of the soils are assigned numerical ratings. These ratings indicate the likelihood that the layer is a source of gravel or sand. The number 0.00 indicates that the layer is a poor source. The number 1.00 indicates that the layer is a good source. A number between 0.00 and 1.00 indicates the degree to which the layer is a likely source.

## Source of Reclamation Material, Roadfill, and Topsoil

Table 12 gives information about the soils as potential sources of reclamation material, roadfill, and topsoil. Normal compaction, minor processing, and other standard construction practices are assumed.

The soils are rated *good*, *fair*, or *poor* as potential sources of reclamation material, roadfill, and topsoil. The features that limit the soils as sources of these materials are specified in the table. Numerical ratings between 0.00 and 0.99 are given after the specified features. These numbers indicate the degree to which the features limit the soils as sources of topsoil, reclamation material, or roadfill. The lower the number, the greater the limitation.

*Reclamation material* is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence. The reconstructed soil favors plant growth. The ratings in the table do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the productive potential of the reconstructed soil. These properties include the content of sodium, salts, and calcium carbonate; reaction; available water capacity; erodibility; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

*Roadfill* is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments. The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

*Topsoil* is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

## Ponds and Embankments

Table 13 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed excavated ponds. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil



has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

*Pond reservoir areas* hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the saturated hydraulic conductivity (Ksat) of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

*Embankments, dikes, and levees* are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. Embankments that have zoned construction (core and shell) are not considered. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of 5 or 6 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

*Aquifer-fed excavated ponds* are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, Ksat of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

# Soil Properties

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Data relating to soil properties are collected during the course of the soil survey.

Soil properties are ascertained by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine particle-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties are shown in tables. They include engineering properties, physical and chemical properties, and pertinent soil and water features.

## Engineering Properties

Table 14 gives the engineering classifications and the range of engineering properties for the layers of each soil in the park.

*Depth* to the upper and lower boundaries of each layer is indicated.

*Texture* is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly."

*Classification* of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement,



the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

*Rock fragments* larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

*Percentage (of soil particles) passing designated sieves* is the percentage of the soil fraction less than 3 inches in diameter based on an oven-dry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

*Liquid limit* and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

## Physical Soil Properties

Table 15 shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the park. The estimates are based on field observations and on test data for these and similar soils.

*Depth* to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller. If a range is not present, a singular representative value is shown.

*Sand* as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In this table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

*Silt* as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In this table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

*Clay* as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, saturated hydraulic conductivity ( $K_{sat}$ ), plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

*Moist bulk density* is the weight of soil (oven-dry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at  $1/3$ - or  $1/10$ -bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute linear extensibility, shrink-swell potential, available water capacity, total pore space, and other soil

properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

*Permeability ( $K_{sat}$ )* refers to the ability of a soil to transmit water or air. The estimates in the table indicate the rate of water movement, in micrometers per second, when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

*Available water capacity* refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

*Shrink-swell potential* is the potential of the soil to expand and contract with a loss or gain in moisture. Linear extensibility is used to determine the shrink-swell potential of soils. Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at  $1/3$ - or  $1/10$ -bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change.

The shrink-swell potential is *low* if the soil has a linear extensibility of less than 3 percent; *moderate* if 3 to 6 percent; *high* if 6 to 9 percent; and *very high* if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

*Organic matter* is the plant and animal residue in the soil at various stages of decomposition. In this table, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

## Erosion Properties

Table 16 shows estimates of some erosion factors that affect a soil's potential for different uses. These estimates are given for each layer of every soil for K factors and are given as one rating for the entire soil for the T factor. Values are reported for each soil in the park. Estimates are based on field observations and on test data for these and similar soils.

Erosion factors are shown in the table as the K factor ( $K_w$  and  $K_f$ ) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and  $K_{sat}$ . Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

The procedure for determining the Kf factor is outlined in Agriculture Handbook 703, "Predicting Soil Erosion by Water: A Guide to Conservation Planning with the Revised Universal Soil Loss Equation (RUSLE)" (USDA-ARS, 1997).

*Depth* to the upper and lower boundaries of each layer is indicated.

*Erosion factor Kw* indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments. In horizons where total rock fragments are 15 percent or more, by volume, the Kw factor is always less than the Kf factor.

*Erosion factor Kf* indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size. Soil horizons that do not have rock fragments are assigned equal Kw and Kf factors.

*Erosion factor T* is an estimate of the maximum average annual rate of soil erosion by wind and/or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

*Wind erodibility groups* are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the "National Soil Survey Handbook."

*Wind erodibility index* is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

## Total Soil Carbon

Table 17 gives estimates of total soil carbon. Soil carbon occurs as organic and inorganic carbon.

*Soil organic carbon (SOC)* is carbon (C) in soil that originated from a biological source, such as plants, animals, or microorganisms. SOC is found in both organic and mineral soil layers. The term "soil organic carbon" refers only to the carbon occurring in soil organic matter (SOM). Soil organic carbon makes up about one-half the weight of soil organic matter. The rest of SOM is mostly oxygen, nitrogen, and hydrogen.

*Soil inorganic carbon (SIC)* is carbon found in soil carbonates, typically as calcium carbonate layers in the soil or as clay-sized fractions throughout the soil. Carbonates in soils are most common in areas where evaporation rates exceed precipitation, as is the case in most desert environments. Typically, the carbonates accumulated from carbonatic dust or from solution during periods of wetter climates. Soil inorganic carbon also occurs in soils that formed in marl in all regions of the country.

The SOC and SIC contents are reported in kilograms per square meter to a depth of 2 meters or to a representative depth of either hard bedrock or a cemented horizon. The SOC and SIC values are on a whole soil basis, corrected for rock fragments.

SOC can be an indicator of overall soil fertility and soil quality that affects ecosystem function. SOM is the main reservoir for most plant nutrients, such as phosphorus and nitrogen. Managing for SOC by managing for SOM increases the content of these elements and improves soil resiliency.

Soil organic matter binds soil particles together and thus increases soil porosity and water infiltration and allows better root penetration and waterflow into the soil. Greater inflow of water reduces the hazard of erosion and the rate of surface water runoff.

Greater SOC levels improve not only soil quality but also the quality of air and water. Soil acts as a filter and improves water quality. Fertile soils that support plant life remove CO<sub>2</sub> from the atmosphere and increase oxygen levels through photosynthesis. Maintaining the level of soil organic carbon reduces C release into the atmosphere and thus can lessen the effects of global warming.

SIC influences the types of plants that will grow. High SIC levels are commonly associated with a higher soil pH, which limits the types of plants that will thrive.

Like SOM, soil carbonates, the source of SIC, also bind soil particles together. They fill voids in the soil and thus can reduce soil porosity. Compacted soil carbonates may restrict root penetration and waterflow into the soil.

## Chemical Soil Properties

Table 18 shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

*Depth* to the upper and lower boundaries of each layer is indicated.

*Cation-exchange capacity* is the total amount of extractable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

*Effective cation-exchange capacity* refers to the sum of extractable cations plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

*Soil reaction* is a measure of acidity or alkalinity. The pH of each soil horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

*Calcium carbonate* equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil.

## Water Features

Table 19 gives estimates of various soil water features. The estimates are used in land use planning that involves engineering considerations.

*Hydrologic soil groups* are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

The *months* in the table indicate the portion of the year in which a water table, ponding, and/or flooding is most likely to be a concern.

*Water table* refers to a saturated zone in the soil. The table indicates, by month, depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

*Ponding* is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. The table indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

*Flooding* is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

*Duration* and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

## Soil Features

Table 20 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Kinds of restrictions include bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation. If no restriction exists, the



table reports "*No restriction.*" *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

*Potential for frost action* is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, saturated hydraulic conductivity ( $K_{sat}$ ), content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

*Risk of corrosion* pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low*, *moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low*, *moderate*, or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.





# Classification of the Soils

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Soils are named and classified on the basis of physical and chemical properties in their horizons (layers). Color, texture, structure, and other properties of the soil to a depth of 2 meters are used to key the soil into a classification system. This system helps people to use soil information and also provides a common language for scientists.

Soils and their horizons differ from one another, depending on how and when they formed. Soil scientists use five soil-forming factors to help predict where different soils may occur. The degree and expression of the soil horizons reflect the extent of interaction of the soil-forming factors with one or more of the soil-forming processes (Simonson, 1959).

When mapping soils, a soil scientist looks for areas with similar soil-forming factors to find similar soils. The properties of the soils are described. Soils are given taxonomic names based on the properties. Soils are classified, mapped, and interpreted on the basis of various kinds of soil horizons and their arrangement. The distribution of soil orders corresponds with the general patterns of the soil-forming factors within the park.

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1999 and 2010). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. The categories are defined in the following paragraphs.

**ORDER.** Soil taxonomy identifies 12 soil orders at the highest hierarchical level. The names for the orders and taxonomic soil properties relate to Greek, Latin, or other root words that reveal something about the soil. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Alfisol.

**SUBORDER.** Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. Sixty-four suborders are recognized at this level of classification. The last syllable in the name of a suborder indicates the order. An example is Udalf (*Ud*, meaning humid, plus *alf*, from Alfisol).

**GREAT GROUP.** Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. There are about 300 great groups. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Hapludalfs (*Hapl*, meaning minimal horizonation, plus *udalf*, the suborder of the Alfisols that has a udic moisture regime).

**SUBGROUP.** Soil taxonomy identifies more than 2,400 subgroups. Each great group has a typic subgroup. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Other subgroups are intergrades or extragrades. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but

do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Ultic* identifies the subgroup that is more weathered than the typical great group. An example is Ultic Hapludalfs.

**FAMILY.** Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below traditional plow depth. Among the properties and characteristics considered are particle-size class, mineralogy class, cation-exchange activity class, soil temperature regime, soil depth, and reaction class. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, mixed, active, mesic Ultic Hapludalfs.

**SERIES.** The soil series is the lowest category in the soil classification system. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile.

Most parks are mapped to the series level. The names of soil series are selected by the soil scientists during the course of mapping. An example is the Loudonville series. The soils of the Loudonville series are fine-loamy, mixed, active, mesic Ultic Hapludalfs. The series names are commonly geographic place names. Because of access limitations and soil variability, some soils are only classified to the great group or subgroup level.

Table 21, "Taxonomic Classification of the Soils," indicates the order, suborder, great group, subgroup, and family of the soil series in the park. Table 22, "Taxonomic Classification Key," displays the classifications sorted by order.

## Soil Series and Their Morphology

Included in this section are descriptions of 10 soils for which the typical pedon is within Delaware Water Gap National Recreation Area. The soils were described during the mapping of the county-based soil surveys. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the "Soil Survey Manual" (Soil Survey Division Staff, 1993) and in the "Field Book for Describing and Sampling Soils" (Schoeneberger and others, 2002). Many of the technical terms used in the descriptions are defined in "Soil Taxonomy" (Soil Survey Staff, 1999) and in "Keys to Soil Taxonomy" (Soil Survey Staff, 2010). Following the pedon description is the range of important characteristics of the soils in the series.

Descriptions of the other soil series in the survey area are available online at <http://soils.usda.gov/>. Search for "official soil series descriptions."

### Atherton Taxadjunct

*Depth class:* Very deep

*Drainage class:* Very poorly drained

*Permeability:* Moderate or moderately slow in the surface layer and subsoil; moderate or moderately rapid in the substratum

*Parent material:* Postglacial fine-silty alluvium

*Landscape:* River valleys

*Landform:* Depressions

*Associated soils:* Aeris Endoaquepts and Atherton, poorly drained, soils

*Slope:* 0 to 3 percent

*Taxonomic classification:* Fine-silty, mixed, active, nonacid, mesic Aeris Endoaquepts

### ***Typical Pedon***

Atherton mucky silt loam, 0 to 3 percent slopes; Montague Township, Sussex County, Delaware Water Gap National Recreation Area; 6,336 feet northeast of the bridge on U.S. Route 206, about 1,850 feet west of County Route 521, and 1,320 feet south of field entrance road, in an abandoned pasture; USGS Milford, Pennsylvania-New Jersey topographic quadrangle; lat. 41 degrees 19 minutes 3.31 seconds N. and long. 74 degrees 46 minutes 56.47 seconds W.; NAD27.

Oi—0 to 2 inches; black (10YR 2/1) slightly decomposed herbaceous plant material.

Oe—2 to 4 inches; black (10YR 2/1) moderately decomposed herbaceous plant material.

A—4 to 8 inches; very dark grayish brown (10YR 3/2) mucky silt loam; moderate fine granular structure; friable; many medium and fine roots; moderately acid (pH 5.9); clear wavy boundary.

Bg1—8 to 10 inches; dark gray (10YR 4/1) silt loam; moderate fine granular structure; friable; many medium and fine roots; slightly acid (pH 6.3); clear wavy boundary.

Bg2—10 to 18 inches; dark gray (10YR 4/1) silt loam; moderate medium subangular blocky structure parting to moderate fine granular; friable; many fine and common medium roots; slightly acid (pH 6.2); clear wavy boundary.

Bg3—18 to 29 inches; olive gray (5Y 5/2) silt loam; massive; firm; few medium roots; few fine prominent brown (7.5YR 5/2) iron depletions with clear boundaries in the matrix; common medium prominent dark yellowish brown (10YR 3/6) iron accumulations with clear boundaries in the matrix; slightly acid (pH 6.2); gradual wavy boundary.

BC1—29 to 32 inches; brown (7.5YR 5/3) silt loam; massive; firm; common medium prominent olive gray (5Y 5/2) iron depletions with clear boundaries in the matrix; few fine distinct strong brown (7.5YR 4/6) iron accumulations with clear boundaries in the matrix; few fine prominent black (10YR 2/1) manganese accumulations with sharp boundaries in the matrix; moderately acid (pH 6.0); gradual wavy boundary.

BC2—32 to 41 inches; brown (7.5YR 5/4) silt loam; massive; firm; many medium prominent reddish gray (5YR 5/2) and few medium prominent greenish gray (5GY 5/1) iron depletions with clear boundaries in the matrix; common medium prominent yellowish red (5YR 5/6) iron accumulations with clear boundaries in the matrix; moderately acid (pH 6.0); gradual wavy boundary.

C1—41 to 45 inches; yellowish brown (10YR 5/4) fine sandy loam; massive; firm; common medium prominent brown (7.5YR 5/2) iron depletions with clear boundaries in the matrix; few medium prominent brown (7.5YR 5/4) iron accumulations with clear boundaries in the matrix; moderately acid (pH 6.0); clear wavy boundary.

C2—45 to 50 inches; brown (7.5YR 4/3) loam; massive; firm; many medium distinct gray (7.5YR 5/1) iron depletions with clear boundaries in the matrix; moderately acid (pH 6.0); clear wavy boundary.

C3—50 to 60 inches; brown (7.5YR 4/2) very fine sandy loam; massive; firm; many coarse distinct dark yellowish brown (10YR 4/6) iron accumulations with clear boundaries in the matrix; moderately acid (pH 6.0); clear wavy boundary.

C4—60 to 70 inches; brown (7.5YR 4/2) fine sandy loam; massive; friable; many coarse prominent dark brown (7.5YR 3/4) and many coarse distinct dark yellowish brown (10YR 4/6) iron accumulations with clear boundaries in the matrix; moderately acid (pH 6.0).

### ***Range in Characteristics***

*Thickness of solum:* 22 to 44 inches

*Coarse fragments:* 0 to 15 percent, by volume

*Reaction:* Strongly acid to neutral in the A horizon, moderately acid to slightly alkaline in the Bg, BC, and C horizons; except where lime has been applied

*O horizon (where present):*

Color—black or dark brown

Texture—slightly to highly decomposed organic material

*A horizon:*

Color—hue of 7.5YR to 2.5Y, value of 2 to 4, and chroma of 2 or less; or neutral in hue and value of 2 to 4

Texture (fine-earth fraction)—silt loam

*Bg horizon:*

Color—hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 1 to 4

Texture (fine-earth fraction)—silty clay loam, silt loam, loam, very fine sandy loam, or fine sandy loam

Redoximorphic features—iron depletions in shades of gray and iron concentrations in shades of brown

*BC horizon:*

Color—hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 1 to 4

Texture (fine-earth fraction)—silty clay loam, silt loam, loam, very fine sandy loam, or fine sandy loam

Redoximorphic features—iron depletions in shades of gray and iron concentrations in shades of brown

*C horizon:*

Color—hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 1 to 4

Texture (fine-earth fraction)—silty clay loam, silt loam, loam, very fine sandy loam, or fine sandy loam

Redoximorphic features—iron depletions in shades of gray and iron concentrations in shades of brown

The Atherton soil in the survey area is mapped as a taxadjunct to the Atherton series because the particle-size family of this soil is fine-silty rather than fine-loamy, which is the typical particle-size family of the Atherton series. Also, ranges for colors and textures differ from the typical ranges for the Atherton series. A poorly drained phase of the Atherton soil is recognized in map units 612732 and 1147470, Atherton mucky silt loam, 0 to 3 percent slopes. Depth to bedrock is greater than 70 inches

## Colonie Series

*Depth class:* Very deep

*Drainage class:* Somewhat excessively drained

*Permeability:* Moderately rapid or rapid

*Parent material:* Postglacial sandy alluvium, sandy eolian deposits, and/or glaciofluvial deposits

*Landscape:* River valleys

*Landform:* Outer terraces

*Associated soils:* Delaware and Unadilla soils

*Slope:* 0 to 8 percent

*Taxonomic classification:* Mixed, mesic Lamellic Udipsamments

### **Typical Pedon**

Colonie loamy fine sand, 3 to 8 percent slopes; Sandyston Township, Sussex County, Delaware Water Gap National Recreation Area; 3,168 feet north of the intersection of Old Mine Road and Van Ness Road, in a wooded area; USGS Culvers Gap topographic quadrangle; lat. 41 degrees 14 minutes 50.1 seconds N. and long. 74 degrees 50 minutes 37.1 seconds W.; NAD83.

- A—0 to 2 inches; dark brown (10YR 3/3) loamy fine sand; weak fine granular structure; very friable; many fine and common medium roots; slightly acid (pH 6.1); clear smooth boundary.
- Ap—2 to 11 inches; dark yellowish brown (10YR 3/4) loamy fine sand; weak medium and fine subangular blocky structure; very friable; common fine and medium roots; moderately acid (pH 5.8); clear smooth boundary.
- E—11 to 24 inches; strong brown (7.5YR 4/6) fine sand; weak medium subangular blocky structure; very friable; common medium and few coarse and fine roots; strongly acid (pH 5.3); gradual wavy boundary.
- E and Bt1—24 to 40 inches; strong brown (7.5YR 4/6) fine sand; weak medium subangular blocky structure; friable; few medium roots; several 2-millimeter-thick, wavy lamellae that are yellowish red (5YR 4/6) fine sandy loam; strongly acid (pH 5.3); gradual wavy boundary.
- E and Bt2—40 to 62 inches; yellowish brown (10YR 5/4) and dark yellowish brown (10YR 4/4) fine sand; weak medium and fine subangular blocky structure; very friable; several 2-millimeter-thick, wavy lamellae that are strong brown (7.5YR 4/6) fine sandy loam; strongly acid (pH 5.3).

### ***Range in Characteristics***

*Thickness of solum:* 40 to 75 inches

*Depth to bedrock:* Greater than 62 inches

*Rock fragments:* 0 to 5 percent, by volume

*Reaction:* Strongly acid to slightly acid in the A and E horizons, strongly acid to neutral in the E and Bt horizon, and moderately acid to neutral in the C horizon; except where lime has been applied

*Other:* In some pedons, contrasting layers of finer or coarser textured deposits are below a depth of 40 inches.

#### ***A and Ap horizons:***

Color—hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 2 or 3

Texture (fine-earth fraction)—loamy fine sand

#### ***E horizon:***

Color—hue of 5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 6

Texture (fine-earth fraction)—fine sand or loamy fine sand

#### ***E and Bt horizon:***

Color—hue of 5YR to 2.5Y, value of 3 to 6, and chroma of 3 to 6

Texture (fine-earth fraction)—fine sand to fine sandy loam

#### ***C horizon (where present):***

Color—hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 2 to 4

Texture (fine-earth fraction)—fine sand or loamy fine sand

## **Delaware Series**

*Depth class:* Very deep

*Drainage class:* Well drained

*Permeability:* Moderately rapid in the surface layer and subsoil; rapid in the substratum

*Parent material:* Postglacial coarse-loamy alluvium (fig. 3)

*Landscape:* River valleys

*Landform:* Terraces

*Associated soils:* Colonie and Unadilla soils

*Slope:* 0 to 8 percent

*Taxonomic classification:* Coarse-loamy, mixed, active, mesic Typic Dystrudepts





Figure 3.—A profile of a Delaware soil. The Delaware soils are very deep and well drained. They formed in postglacial alluvium deposited along the Delaware River in the Delaware Valley. Note the lack of rock fragments. Map units comprised of Delaware soils are rated as prime farmland. Depths on the tape are in inches (USDA–NRCS, 2009).

### ***Typical Pedon***

Delaware fine sandy loam, 0 to 3 percent slopes, rarely flooded; Pahaquarry Township, Warren County, Delaware Water Gap National Recreation Area, Depew Island Picnic Area; 2,050 feet northwest of the intersection of Old Mine Road and an access road, 500 feet northeast of the access road, in a crop field; USGS Bushkill topographic quadrangle; lat. 41 degrees 3 minutes 42.7 seconds N. and long. 75 degrees 0 minutes 32.8 seconds W.; NAD83.

- Oi—0 to 1 inch; black (10YR 2/1) slightly decomposed organic material.
- Ap1—1 to 4 inches; very dark grayish brown (10YR 3/2) fine sandy loam; moderate fine and medium granular structure; very friable; many fine roots; strongly acid (pH 5.3); abrupt smooth boundary.
- Ap2—4 to 11 inches; dark yellowish brown (10YR 4/4) fine sandy loam; weak fine subangular blocky structure parting to weak fine granular; very friable; common coarse, medium, and fine roots; strongly acid (pH 5.3); abrupt wavy boundary.
- Bw1—11 to 20 inches; dark yellowish brown (10YR 4/4) fine sandy loam; moderate fine and medium subangular blocky structure; very friable; strongly acid (pH 5.3); clear wavy boundary.
- Bw2—20 to 33 inches; brown (7.5YR 4/4) fine sandy loam; moderate fine and medium subangular blocky structure; very friable; strongly acid (pH 5.3); clear wavy boundary.
- BC—33 to 41 inches; dark yellowish brown (10YR 4/4) fine sandy loam; weak fine and medium subangular blocky structure; very friable; strongly acid (pH 5.3); clear wavy boundary.
- C1—41 to 56 inches; 60 percent dark yellowish brown (10YR 4/4) fine sandy loam and 40 percent brown (7.5YR 4/4) fine sandy loam; massive; very friable; strongly acid (pH 5.3); clear wavy boundary.
- C2—56 to 60 inches; brown (7.5YR 4/4) loam; massive; friable; strongly acid (pH 5.3).

### ***Range in Characteristics***

*Thickness of solum:* 30 to 60 inches

*Depth to bedrock:* Greater than 74 inches

*Rock fragments:* 0 to 5 percent, by volume

*Reaction:* Strongly acid to slightly acid, except where lime has been applied

*O horizon (where present):*

Color—black or dark brown

Texture—slightly or moderately decomposed plant material

*Ap horizon:*

Color—hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 to 4

Texture (fine-earth fraction)—fine sandy loam

*Bw horizon:*

Color—hue of 5YR to 10YR, value of 3 to 5, and chroma of 3 to 6

Texture (fine-earth fraction)—fine sandy loam

*BC horizon:*

Color—hue of 5YR to 10YR, value of 3 to 6, and chroma of 2 to 6

Texture (fine-earth fraction)—fine sandy loam

*C horizon:*

Color—hue of 5YR to 10YR, value of 4 to 6, and chroma of 2 to 6

Texture (fine-earth fraction)—fine sandy loam to loamy sand

## **Lackawanna Series**

*Depth class:* Very deep

*Drainage class:* Well drained

*Permeability:* Moderate above the fragipan; slow in the fragipan

*Parent material:* Coarse-loamy till derived from red shale and/or red sandstone and siltstone

*Landscape:* Mountains

*Landform:* Ground moraines



## Soil Survey of Delaware Water Gap National Recreation Area

*Associated components:* Oquaga and Wellsboro soils and rock outcrop

*Slope:* 0 to 35 percent

*Taxonomic classification:* Coarse-loamy, mixed, active, mesic Typic Fragiudepts

### **Typical Pedon**

Lackawanna cobbly fine sandy loam, 8 to 15 percent slopes, extremely stony; Pahaquarry Township, Warren County, Delaware Water Gap National Recreation Area; 3,168 feet west of the intersection of Brink Road and County Route 602, about 400 feet north of Brink Road, in a wooded area on the shoulder of Kittatinny Mountain; USGS Flatbrookville topographic quadrangle; lat. 41 degrees 3 minutes 45.59 seconds N. and long. 74 degrees 58 minutes 20.00 seconds W.; NAD83.

Oi—0 to 2 inches; black (10YR 2/1) slightly decomposed organic material.

A—2 to 3 inches; black (5YR 2.5/1) cobbly fine sandy loam; weak fine granular structure; friable; many fine and medium roots; 9 percent cobbles (red and gray subangular sandstone); 6 percent stones (red and gray subangular sandstone); 5 percent coarse gravel (red and gray subangular sandstone); extremely acid (pH 4.2); abrupt irregular boundary.

E—3 to 7 inches; pinkish gray (5YR 6/2) cobbly fine sandy loam; weak medium subangular blocky structure parting to weak medium granular; friable; common fine and medium roots; 9 percent cobbles (red and gray subangular sandstone); 6 percent stones (red and gray subangular sandstone); 5 percent coarse gravel (red and gray subangular sandstone); extremely acid (pH 4.2); abrupt irregular boundary.

Bhs—7 to 8 inches; dusky red (2.5YR 3/2) cobbly fine sandy loam; moderate medium subangular blocky structure; friable; common fine and medium roots; 9 percent cobbles (red and gray subangular sandstone); 7 percent coarse gravel (red and gray subangular sandstone); 6 percent stones (red and gray subangular sandstone); extremely acid (pH 4.4); abrupt broken boundary.

Bw1—8 to 16 inches; reddish brown (5YR 5/4) stony loam; moderate medium subangular blocky structure; friable; common fine, medium, and coarse roots; 10 percent coarse gravel (red and gray subangular sandstone); 7 percent cobbles (red and gray subangular sandstone); 5 percent stones (red and gray subangular sandstone); strongly acid (pH 5.3); clear smooth boundary.

Bw2—16 to 24 inches; reddish brown (5YR 5/4) stony loam; moderate medium platy structure; firm; common fine roots; 10 percent coarse gravel (red and gray subangular sandstone); 7 percent cobbles (red and gray subangular sandstone); 5 percent stones (red and gray subangular sandstone); strongly acid (pH 5.3); clear smooth boundary.

Bx1—24 to 29 inches; dusky red (2.5YR 4/4) stony fine sandy loam; few medium faint weak red (2.5YR 5/2) iron depletions with clear boundaries on vertical faces of prisms; strong medium platy structure; very firm; brittle; few faint patchy dusky red (2.5YR 4/4) clay films on surfaces along pores; 20 percent coarse gravel (red and gray subangular sandstone); 7 percent cobbles (red and gray subangular sandstone); 5 percent stones (red and gray subangular sandstone); strongly acid (pH 5.3); clear smooth boundary.

Bx2—29 to 60 inches; dusky red (2.5YR 4/3) very cobbly fine sandy loam; common medium faint weak red (2.5YR 5/2) iron depletions with clear boundaries on vertical faces of prisms; strong medium platy structure; very firm; brittle; few faint patchy dusky red (2.5YR 4/4) clay films on surfaces along pores; 20 percent coarse gravel (red and gray subangular sandstone); 15 percent cobbles (red and gray subangular sandstone); 10 percent stones (red and gray subrounded sandstone); strongly acid (pH 5.3).

### **Range in Characteristics**

*Thickness of solum:* 40 to more than 75 inches

## Soil Survey of Delaware Water Gap National Recreation Area

*Depth to fragipan:* 17 to 36 inches

*Depth to bedrock:* Greater than 60 inches

*Rock fragments:* 10 to 40 percent, by volume, in the A, E, Bhs, and Bw horizons; 15 to 65 percent in the Bx and C horizons

*Reaction:* Extremely acid to strongly acid, except where lime has been applied

*O horizon (where present):*

Color—black

Texture—slightly or moderately decomposed plant material

*A horizon:*

Color—hue of 5YR to 10YR, value of 2 to 4, and chroma of 1 to 3

Texture (fine-earth fraction)—fine sandy loam

*E horizon:*

Color—hue of 5YR to 10YR, value of 3 to 6, and chroma of 2 or 3

Texture (fine-earth fraction)—fine sandy loam

*Bhs horizon:*

Color—hue of 2.5YR to 10YR, value of 3, and chroma of 2 or 3

Texture (fine-earth fraction)—fine sandy loam

*Bw horizon:*

Color—hue of 2.5YR to 10YR, value of 4 or 5, and chroma of 3 to 6

Texture (fine-earth fraction)—fine sandy loam, loam, or silt loam

*Bx horizon:*

Color—hue of 10R to 5YR, value of 3 to 5, and chroma of 2 to 4

Texture (fine-earth fraction)—sandy loam, loam, fine sandy loam, or silt loam

Redoximorphic features—iron depletions in shades of gray and iron accumulations in shades of red

## Oquaga Series

*Depth class:* Moderately deep

*Drainage class:* Somewhat excessively drained

*Permeability:* Moderate

*Parent material:* Loamy till derived from red sandstone and siltstone and/or red shale

*Landscape:* Mountains

*Landform:* Ground moraines

*Associated components:* Arnot, Lackawanna, and Wellsboro soils and rock outcrop

*Slope:* 0 to 60 percent

*Taxonomic classification:* Loamy-skeletal, mixed, superactive, mesic Typic Dystrudepts

### Typical Pedon

Oquaga channery loam in an area of Oquaga-Lackawanna complex, 15 to 35 percent slopes, very rocky; Walpack Township, Sussex County, Delaware Water Gap National Recreation Area; 3,062 feet north of the parking lot for Blue Mountain Lakes, 50 feet southeast of the main trail above Blue Mountain Lakes, in a wooded area; USGS Flatbrookville topographic quadrangle; lat. 41 degrees 6 minutes 15.21 seconds N. and long. 74 degrees 55 minutes 40.58 seconds W.; NAD83.

Oi—0 to 1 inch; black (10YR 2/1) slightly decomposed organic material.

A—1 to 4 inches; very dark brown (7.5YR 2.5/2) channery loam; weak fine granular structure; very friable; many fine and common medium roots; 17 percent channers (red and gray sandstone); very strongly acid (pH 4.6); abrupt wavy boundary.

Bw—4 to 20 inches; brown (7.5YR 4/4) very channery loam; weak medium subangular blocky structure; friable; common fine and medium roots; 40 percent channers (red and gray sandstone); very strongly acid (pH 4.8); clear wavy boundary.

C—20 to 25 inches; brown (7.5YR 4/4) extremely channery loam; massive; friable; few fine and common coarse roots; 70 percent channers (red and gray sandstone); very strongly acid (pH 4.8); abrupt wavy boundary.

2R—25 inches; fractured red sandstone bedrock.

### ***Range in Characteristics***

*Depth to bedrock:* 20 to 40 inches

*Rock fragments:* 15 to 60 percent, by volume, in the A horizon; 25 to 85 percent, by volume, in the Bw and C horizons

*Reaction:* Extremely acid to strongly acid, except where lime has been applied

*O horizon (where present):*

Color—black or brown

Texture—slightly or moderately decomposed plant material

*A horizon:*

Color—hue of 2.5YR to 10YR, value of 2 to 5, and chroma of 1 to 3

Texture (fine-earth fraction)—loam

*Bw horizon:*

Color—hue of 2.5YR to 7.5YR, value of 3 to 6, and chroma of 3 to 8

Texture (fine-earth fraction)—fine sandy loam, loam, or silt loam

*C horizon:*

Color—hue of 10R to 7.5YR, value of 3 to 5, and chroma of 2 to 4

Texture (fine-earth fraction)—sandy loam, fine sandy loam, loam, or silt loam

*2R layer:*

Type of bedrock—hard, red sandstone and shale bedrock

## **Scio Series**

*Depth class:* Very deep

*Drainage class:* Moderately well drained

*Permeability:* Moderate

*Parent material:* Postglacial coarse-silty alluvium

*Landscape:* River valleys

*Landform:* Inner terraces

*Associated soils:* Aeric Endoaquepts and Unadilla soils

*Slope:* 0 to 3 percent

*Taxonomic classification:* Coarse-silty, mixed, active, mesic Aquic Dystrudepts

### ***Typical Pedon***

Scio silt loam, 0 to 3 percent slopes; Montague Township, Sussex County, Delaware Water Gap National Recreation Area; 3,960 feet northeast of the bridge on U.S. Route 206, about 2,000 feet west of County Route 521, and 2,600 feet south of terrace entrance road, in an abandoned crop field; USGS Milford, Pennsylvania-New Jersey topographic quadrangle; lat. 41 degrees 18 minutes 47.2 seconds N. and long. 74 degrees 47 minutes 20.2 seconds W.; NAD83.

Ap1—0 to 6 inches; dark brown (7.5YR 3/3) silt loam; weak fine subangular blocky structure parting to moderate fine granular; friable; many fine and medium roots; moderately acid (pH 5.6); clear wavy boundary.

- Ap2—6 to 13 inches; dark brown (7.5YR 3/3) silt loam; common medium faint brown (7.5YR 4/3) worm channels; weak medium subangular blocky structure parting to moderate fine granular; friable; many fine and medium roots; moderately acid (pH 5.6); clear wavy boundary.
- Bw1—13 to 23 inches; brown (7.5YR 4/3) silt loam; moderate medium subangular blocky structure; friable; common fine and medium roots; few fine distinct brown (7.5YR 4/3) clay films on surfaces along pores; many medium distinct strong brown (7.5YR 4/6) and common medium distinct dark brown (7.5YR 3/4) iron accumulations with clear boundaries in the matrix; moderately acid (pH 5.6); gradual wavy boundary.
- Bw2—23 to 28 inches; brown (7.5YR 4/3) silt loam; moderate medium subangular blocky structure; friable; common fine and medium roots; few fine distinct brown (7.5YR 4/3) clay films on surfaces along pores; many medium faint brown (7.5YR 4/2) iron depletions with clear boundaries in the matrix; many medium distinct strong brown (7.5YR 4/6) iron accumulations with clear boundaries in the matrix; moderately acid (pH 5.6); gradual wavy boundary.
- BC—28 to 50 inches; brown (7.5YR 4/2) silt loam; moderate medium subangular blocky structure; friable; common fine and medium roots; many medium distinct strong brown (7.5YR 4/6) iron accumulations with clear boundaries in the matrix; moderately acid (pH 5.6); gradual wavy boundary.
- C1—50 to 59 inches; brown (7.5YR 4/2) silt loam; massive; friable; common medium distinct strong brown (7.5YR 4/6) iron accumulations with clear boundaries in the matrix; moderately acid (pH 5.8); gradual wavy boundary.
- C2—59 to 72 inches; brown (7.5YR 4/2) silt loam; massive; friable; many coarse prominent yellowish red (5YR 4/6) iron accumulations with clear boundaries in the matrix; common medium and fine prominent black (10YR 2/1) manganese accumulations with clear boundaries in the matrix; moderately acid (pH 5.8).

### ***Range in Characteristics***

*Thickness of solum:* 20 to 50 inches

*Depth to bedrock:* Greater than 72 inches

*Coarse fragments:* 0 to 5 percent, by volume, in the A, Bw, and BC horizons; 0 to 35 percent, by volume, in the C horizon

*Reaction:* Extremely acid to strongly acid in the A, Bw, and BC horizons and strongly acid to slightly alkaline in the C horizon; except where lime has been applied

*O horizon (where present):*

Color—black or brown

Texture—slightly to highly decomposed plant material

*Ap horizon:*

Color—hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 2 or 3

Texture (fine-earth fraction)—silt loam

*Bw horizon:*

Color—hue of 7.5YR to 5Y, value of 4 or 5, and chroma of 3 to 6

Texture (fine-earth fraction)—silt loam or very fine sandy loam

Redoximorphic features—iron depletions in shades of gray and iron concentrations in shades of brown

*BC horizon:*

Color—hue of 7.5YR to 5Y, value of 4 or 5, and chroma of 2 to 6

Texture (fine-earth fraction)—silt loam or very fine sandy loam

Redoximorphic features—iron depletions in shades of gray and iron concentrations in shades of brown

*C horizon:*

Color—hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 1 to 4

Texture (fine-earth fraction)—silt loam or very fine sandy loam

Redoximorphic features—iron depletions in shades of gray, iron concentrations in shades of brown or yellowish red, and manganese concentrations that are black

## Udifulvents

### *Typical Pedon*

Udifulvents, 0 to 3 percent slopes, occasionally flooded; Walpack Township, Sussex County, Delaware Water Gap National Recreation Area, Walpack Bend; 4,500 feet southwest of the intersection of County Route 615 and Old Mine Road, 1,400 feet south of Old Mine Road, in a wooded area on a terrace adjacent to the Delaware River; USGS Flatbrookville, New Jersey-Pennsylvania topographic quadrangle; lat. 41 degrees 5 minutes 38 seconds N. and long. 74 degrees 58 minutes 27 seconds W.; NAD27.

A—0 to 3 inches; dark yellowish brown (10YR 3/3) loamy sand; single grain; loose; strongly acid (pH 5.3); clear smooth boundary.

C1—3 to 16 inches; very dark gray (10YR 3/1) loamy sand; single grain; loose; strongly acid (pH 5.5); clear wavy boundary.

C2—16 to 22 inches; dark brown (10YR 3/3) sandy loam; massive; friable; strongly acid (pH 5.5); clear wavy boundary.

C3—22 to 27 inches; dark brown (10YR 3/3) sandy loam; massive; friable; common medium faint brown (10YR 4/3) iron depletions with clear boundaries in the matrix; strongly acid (pH 5.5); clear wavy boundary.

C4—27 to 32 inches; dark brown (10YR 3/3) sandy loam; massive; friable; strongly acid (pH 5.5); clear wavy boundary.

C5—32 to 50 inches; stratified 95 percent dark yellowish brown (10YR 3/4) loamy sand and 5 percent dark yellowish brown (10YR 3/4) fine sandy loam; massive; friable; common medium faint brown (10YR 4/3) iron depletions with clear boundaries in the matrix; strongly acid (pH 5.5).

### *Range in Characteristics*

*Thickness of solum:* 6 to 30 inches

*Depth to bedrock:* Greater than 60 inches

*Rock fragments:* 0 to 35 percent, by volume

*Reaction:* Very strongly acid to moderately acid

*O horizon (where present):*

Color—black or dark brown

Texture—slightly to highly decomposed organic material

*A horizon:*

Color—hue of 7.5YR to 2.5Y, value of 2 to 4, and chroma of 1 to 6

Texture (fine-earth fraction)—loamy sand

*C horizon:*

Color—hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 1 to 6

Texture (fine-earth fraction)—loamy sand or sandy loam; stratified in some pedons

Redoximorphic features—iron depletions in shades of gray and iron concentrations in shades of brown

## Unadilla Series

*Depth class:* Very deep

*Drainage class:* Well drained

## Soil Survey of Delaware Water Gap National Recreation Area

*Permeability:* Moderate in the surface layer and subsoil; moderately rapid or rapid in the substratum

*Parent material:* Postglacial coarse-silty alluvium

*Landscape:* River valleys

*Landform:* Inner terraces

*Associated soils:* Colonie and Delaware soils

*Slope:* 0 to 8 percent

*Taxonomic classification:* Coarse-silty, mixed, active, mesic Typic Dystrudepts

### **Typical Pedon**

Unadilla silt loam, 0 to 3 percent slopes; Walpack Township, Sussex County, Delaware Water Gap National Recreational Area, Walpack Landing Field; 250 feet northeast of gravel entrance road, 200 feet west of Old Mine Road, in a crop field; USGS Lake Maskenozha topographic quadrangle; lat. 41 degrees 7 minutes 30.5 seconds N. and long. 74 degrees 56 minutes 38.5 seconds W.; NAD83.

Ap1—0 to 8 inches; dark brown (10YR 3/3) silt loam; moderate fine and medium granular structure; friable; common very fine and fine roots; neutral (pH 7.0); clear smooth boundary.

Ap2—8 to 14 inches; dark brown (10YR 4/3) silt loam; moderate medium granular structure; friable; common very fine and fine roots; neutral (pH 6.6); abrupt smooth boundary.

Bw—14 to 25 inches; dark yellowish brown (10YR 3/4) silt loam; weak medium subangular blocky structure; friable; common very fine roots; neutral (pH 6.6); gradual wavy boundary.

BC—25 to 39 inches; dark yellowish brown (10YR 4/4) silt loam; weak medium and coarse subangular blocky structure; friable; neutral (pH 6.6); gradual wavy boundary.

C—39 to 60 inches; dark yellowish brown (10YR 4/4) very fine sandy loam; massive; friable; slightly acid (pH 6.5).

### **Range in Characteristics**

*Thickness of solum:* 20 to more than 50 inches

*Depth to bedrock:* Greater than 60 inches

*Rock fragments:* 0 to 5 percent, by volume, in the A, Bw, and BC horizons; 0 to 15 percent, by volume, in the C horizon

*Reaction:* Very strongly acid to neutral, except where lime has been applied

*O horizon (where present):*

Color—black or brown

Texture—slightly or moderately decomposed plant material

*Ap horizon:*

Color—hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 2 to 4

Texture (fine-earth fraction)—silt loam

*Bw horizon:*

Color—hue of 7.5YR to 2.5Y, value of 3 to 6, and chroma of 4 to 8

Texture (fine-earth fraction)—silt loam to very fine sandy loam

*BC horizon:*

Color—hue of 7.5YR to 2.5Y, value of 3 to 5, and chroma of 4 to 6

Texture (fine-earth fraction)—silt loam to very fine sandy loam

*C horizon:*

Color—hue of 7.5YR to 5Y, value of 4 or 5, and chroma of 2 to 6



Texture (fine-earth fraction)—loamy very fine sand, very fine sandy loam, or silt loam to a depth of 40 inches; very fine sandy loam or fine sandy loam below a depth of 40 inches

## Wallpack Series

*Depth class:* Very deep

*Drainage class:* Well drained

*Permeability:* Moderate or moderately rapid above the fragipan; moderately slow to very slow in the fragipan

*Parent material:* Coarse-loamy till derived from limestone, sandstone, and shale

*Landscape:* Till plains

*Landform:* Ridges

*Associated components:* Cambridge, Chadakoin, and Lordstown soils and rock outcrop

*Slope:* 0 to 35 percent

*Taxonomic classification:* Coarse-loamy, mixed, semiactive, mesic Typic Fragiudalfs

### Typical Pedon

Wallpack silt loam, 8 to 15 percent slopes; Walpack Township, Sussex County, Delaware Water Gap National Recreation Area; 2,300 feet northwest of Walpack Center, 200 feet southwest of intersection of old township roads, and 100 feet east of an old north-south township road, in an abandoned crop field; USGS Lake Maskenozha topographic quadrangle; lat. 41 degrees 9 minutes 39.5 seconds N. and long. 74 degrees 53 minutes 15.3 seconds W.; NAD83.

Ap1—0 to 3 inches; brown (10YR 4/3) silt loam; moderate fine and medium granular structure; friable; common fine and medium roots; 5 percent medium gravel (subangular shale and limestone); 5 percent medium gravel (subrounded shale and limestone); strongly acid (pH 5.3); abrupt smooth boundary.

Ap2—3 to 9 inches; dark yellowish brown (10YR 4/4) gravelly silt loam; moderate fine granular and subangular blocky structure; friable; common fine and medium roots; 10 percent coarse gravel (subangular shale and limestone); 5 percent medium gravel (subrounded shale and limestone); strongly acid (pH 5.3); abrupt smooth boundary.

Bt—9 to 16 inches; yellowish brown (10YR 5/6) gravelly silt loam; moderate medium subangular blocky structure; friable; few fine roots; common distinct discontinuous brown (7.5YR 4/4) clay films on rock fragments; 10 percent medium gravel (subangular shale and limestone); 10 percent medium gravel (subrounded shale and limestone); moderately acid (pH 5.8); clear wavy boundary.

Btx1—16 to 25 inches; dark yellowish brown (10YR 4/4) gravelly silt loam; moderate coarse prismatic structure parting to moderate medium subangular blocky and weak medium platy; very firm; brittle; common distinct patchy brown (7.5YR 4/4) clay films on rock fragments; many coarse prominent light brownish gray (2.5Y 6/2) iron depletions with clear boundaries between prisms; many coarse distinct yellowish brown (10YR 5/8) iron accumulations with clear boundaries on vertical faces of prisms; 20 percent fine gravel (subrounded shale and limestone); 5 percent medium gravel (subangular shale and limestone); slightly acid (pH 6.4); clear wavy boundary.

Btx2—25 to 65 inches; dark yellowish brown (10YR 4/4) very gravelly silt loam; strong very coarse prismatic structure parting to moderate medium subangular blocky and weak medium platy; very firm; brittle; common distinct patchy brown (7.5YR 4/4) clay films on rock fragments; common medium distinct light olive brown (2.5Y



5/4) iron accumulations with clear boundaries between prisms; common medium distinct strong brown (7.5YR 5/6) iron accumulations with clear boundaries on vertical faces of prisms; 20 percent coarse gravel (subangular shale and limestone); 20 percent fine gravel (subrounded shale and limestone); neutral (pH 7.0).

### ***Range in Characteristics***

*Thickness of solum:* 24 to more than 60 inches

*Depth to fragipan:* 12 to 36 inches

*Depth to bedrock:* Greater than 65 inches

*Rock fragments:* 5 to 25 percent, by volume, in the A or Ap, AB or BA, and Bt horizons and 15 to 45 percent, by volume, in the Btx and C horizons

*Reaction:* Strongly acid to slightly acid in the A or Ap, AB or BA, and Bt horizons and moderately acid to slightly alkaline in the Btx and C horizons; except where lime has been applied

*Other:* Some pedons have an A horizon that is thinner than that of the typical pedon and has colors and textures similar to those of the Ap horizon.

*O horizon (where present):*

Color—black

Texture—slightly or moderately decomposed plant material

*Ap or A horizon:*

Color—hue of 10YR, value from 3 to 5, and chroma of 1 to 4

Texture (fine-earth fraction)—silt loam

*AB or BA horizon (where present):*

Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 3 to 6

Texture (fine-earth fraction)—sandy loam to silt loam

*Bt horizon:*

Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 to 8

Texture (fine-earth fraction)—sandy loam to silt loam

*Btx horizon:*

Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 to 6

Texture (fine-earth fraction)—sandy loam to silt loam

Redoximorphic features—iron depletions in shades of gray and iron accumulations in shades of brown

*C horizon (where present):*

Color—hue of 5Y to 7.5YR, value of 4 or 5, and chroma of 4 to 6

Texture (fine-earth fraction)—sandy loam to silt loam

## **Wellsboro Series**

*Depth class:* Very deep

*Drainage class:* Moderately well drained

*Permeability:* Moderate above the fragipan; slow in the fragipan

*Parent material:* Coarse-loamy till derived from red shale and/or red sandstone and siltstone

*Landscape:* Mountains

*Landform:* Ground moraines

*Associated soils:* Lackawanna and Morris soils

*Slope:* 0 to 15 percent

*Taxonomic classification:* Coarse-loamy, mixed, active, mesic Typic Fragiudepts

### ***Typical Pedon***

Wellsboro silt loam, 0 to 8 percent slopes, extremely stony; Pahaquarry Township, Warren County, Delaware Water Gap National Recreation Area, Millbrook Village; 528 feet west of the intersection of Old Mine Road and County Route 602, about 200 feet north of Old Mine Road, in a wooded area at the toeslope of Kittatinny Mountain; USGS Flatbrookville topographic quadrangle; lat. 41 degrees 4 minutes 24 seconds N. and long. 74 degrees 57 minutes 40 seconds W.; NAD83.

- Ap—0 to 8 inches; brown (10YR 4/3) silt loam; weak medium subangular blocky structure parting to moderate medium and fine granular; friable; common fine and medium and few coarse roots; 8 percent cobbles (red and gray subangular sandstone); 3 percent coarse gravel (red and gray subangular sandstone); strongly acid (pH 5.3); clear wavy boundary.
- Bw1—8 to 15 inches; light reddish brown (5YR 6/3) cobbly silt loam; moderate medium subangular blocky structure; friable; common fine roots; common fine distinct reddish brown (5YR 5/4) iron accumulations with clear boundaries in the matrix; many medium prominent black (10YR 2/1) manganese accumulations in the matrix; 14 percent cobbles (red and gray subangular sandstone); 10 percent coarse gravel (red and gray subangular sandstone); strongly acid (pH 5.2); gradual wavy boundary.
- Bw2—15 to 24 inches; light reddish brown (5YR 6/3) cobbly loam; moderate medium subangular blocky structure; friable; few fine roots; many medium prominent strong brown (7.5YR 5/6) iron accumulations with clear boundaries in the matrix; 14 percent cobbles (red and gray subangular sandstone); 10 percent coarse gravel (red and gray subangular sandstone); strongly acid (pH 5.2); gradual wavy boundary.
- Bw3—24 to 29 inches; light brown (7.5YR 6/3) cobbly loam; moderate medium subangular blocky structure; friable; few fine roots; common medium faint pinkish gray (7.5YR 6/2) iron depletions with clear boundaries in the matrix; many medium distinct strong brown (7.5YR 5/6) and common medium distinct yellowish red (5YR 4/6) iron accumulations with clear boundaries in the matrix; 15 percent cobbles (red and gray subangular sandstone); 14 percent coarse gravel (red and gray subangular sandstone); strongly acid (pH 5.2); clear wavy boundary.
- Bx1—29 to 37 inches; reddish brown (5YR 4/3) cobbly sandy loam; moderate very thick platy structure; firm; common vesicular pores; common distinct patchy reddish brown (5YR 4/3) clay films on rock fragments; 18 percent cobbles (red and gray subangular sandstone); 16 percent coarse gravel (red and gray subangular sandstone); strongly acid (pH 5.1); gradual wavy boundary.
- Bx2—37 to 60 inches; 70 percent reddish brown (5YR 4/3) and 30 percent weak red (2.5YR 5/3) cobbly sandy loam; moderate very thick platy structure; firm; common vesicular pores; common distinct patchy reddish brown (5YR 4/3) clay films on rock fragments; common medium faint reddish brown (5YR 4/4) iron accumulations with clear boundaries in the matrix; common medium prominent black (10YR 2/1) manganese accumulations with sharp boundaries in the matrix; 18 percent cobbles (red and gray subangular sandstone); 16 percent coarse gravel (red and gray subangular sandstone); strongly acid (pH 5.1).

### ***Range in Characteristics***

*Thickness of solum:* 40 inches or more

*Depth to fragipan:* 17 to 36 inches

*Depth to bedrock:* Greater than 60 inches

*Rock fragments:* 10 to 40 percent, by volume, in the A, E, and Bw horizons; 15 to 45 percent, by volume, in the Bx horizon

*Reaction:* Extremely acid to strongly acid, except where lime has been applied

## Soil Survey of Delaware Water Gap National Recreation Area

*Other:* Some pedons have an A horizon that is thinner than that of the typical pedon but has colors and textures similar to those of the Ap horizon.

*O horizon (where present):*

Color—black or brown

Texture—slightly or moderately decomposed plant material

*Ap horizon*

Color—hue of 5YR to 10YR, value of 2 to 4, and chroma of 1 to 3

Texture (fine-earth fraction)—silt loam

*E horizon (where present):*

Color—hue of 5YR to 10YR, value of 3 to 6, and chroma of 2 or 3

Texture (fine-earth fraction)—fine sandy loam, loam, or silt loam

*Bw horizon:*

Color—hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 3 to 6

Texture (fine-earth fraction)—loam or silt loam

*Bx horizon:*

Color—hue of 10R to 5YR, value of 3 to 5, and chroma of 2 to 4

Texture (fine-earth fraction)—sandy loam, loam, or silt loam

Redoximorphic features—iron depletions in shades of gray and iron accumulations in shades of red



# Formation of the Soils

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By Susan Burlew Southard, Natural Resources Conservation Service.

This section describes the factors of soil formation and the processes of horizon formation and relates them to the soils in Delaware Water Gap National Recreation Area, New Jersey and Pennsylvania.

## Setting

The setting and geologic materials of the park are related to the parent materials and therefore to the types of soils in the park. The geographic setting, geologic materials, and earth-shaping processes of Delaware Water Gap National Recreation Area have contributed to the many types of soils found in the park. Understanding the soils of the park enhances understanding of the unique relationship between soils and the environment. Soil forming processes are influenced by rock type, topographic expression, surface properties, and hydrologic properties. Because soil formation influences soil properties and behaviors, an understanding of the processes of soil formation may help in the determination of best management practices.

The park encompasses 70,000 acres of land in New Jersey and Pennsylvania along the Delaware River, extending for 35 miles upstream from the Delaware Water Gap (fig. 4).

The crest of Kittatinny Mountain is observable at the gap and is the approximate eastern boundary of the park in New Jersey (fig. 5). The crest forms a long ridge that maintains a nearly level elevation between 1,400 and 1,600 feet for much of its extent from the southeastern boundary of the park northward to the New Jersey-New York border. Kittatinny Mountain has a core consisting of the highly erosion-resistant material from the Silurian Shawangunk Formation (USDA–NRCS, 2009). The high quartz content of the conglomerates and sandstones of the Shawangunk Formation ensures that the rock is resistant to both mechanical and chemical weathering and to erosion (Witte, 1997). Due to preferential erosion, Kittatinny Mountain has remained relatively unchanged as the surrounding landscape has continued to erode (fig. 6).

The Great Valley Region of New Jersey is east of Kittatinny Mountain. The carbonate rocks and shale of Cambrian and Ordovician age in the Great Valley Region are more easily weathered than the Shawangunk conglomerates. The Port Jervis Trough lies to the west along the Pennsylvania-New Jersey border. The Early and Middle Devonian rocks of the trough are also more easily eroded than the Shawangunk Formation. At Port Jervis, the Delaware River is deflected by Walpack Ridge and turns south along the trough. Walpack Ridge is comprised of hard limestone that was not broken off and worn down by glaciation. Past the point of deflection, the river follows the trough into the survey area. The trough forms the locally-named Minisink Valley. The trough (and valley) formed along the contact of steeply westward-dipping Devonian strata and the geologic formations of the Kittatinny Mountain to the east. The Minisink Valley area of the park has been buried by glaciofluvial deposits (Witte, 2012). Glaciofluvial deposits are stratified materials moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The Delaware River bends again at the end of the Walpack Ridge near Flatbrookville, in

# Soil Survey of Delaware Water Gap National Recreation Area



Figure 4.—Map of Delaware Water Gap National Recreation Area.





Figure 5.—The Delaware Water Gap in the distance as viewed from the New Jersey side of the river.



Figure 6.—The Kittatinny Mountain summit looking south across Culvers Gap. The map unit in this area is Arnot-Lordstown complex, 0 to 15 percent slopes, very rocky. Note glacier-polished rock outcrop. The Arnot soil is shallow and associated with rock outcrop. The mountain provides some of the most spectacular views in the park (USDA–NRCS, 2009).



the approximate geographic center of Delaware Water Gap National Recreation Area. The entire park has been affected by glaciation.

## Factors of Soil Formation

Soil covers the surface of the earth as a three-dimensional body of varying thickness and is made up of different proportions of organic and mineral material and pore space filled with gases and water. Soils differ in their appearance, productivity, and management requirements due to their chemical and physical properties. The characteristics and properties of soils are determined by physical and chemical processes that result from the interaction of five soil-forming factors. These factors of soil formation are interdependent, and few generalizations can be made regarding any one factor unless the effects of the other factors are known. The term “pedogenesis” is often used to refer to the processes of soil formation.

The interacting soil-forming factors are parent material, climate, organisms, time, and topography and relief (Jenny, 1941). Parent material is the source material (mineral or organic) in which soils formed. Soils are influenced by the texture and structure of the parent material and its mineralogical and chemical composition. The predominant aspects of climate that affect soil formation are temperature and kind and amount of precipitation. The seasonal distribution of temperature and precipitation also has an influence. Organisms include humans and the plants, animals, and microorganisms living in and on the soil. Time refers to how long the soil-forming factors have been operating on a particular landscape. Relief and topography refer to the elevation and shape of the landscape. They affect internal and external soil properties, such as drainage, aeration, susceptibility to erosion, and exposure to sun and wind.

The processes of soil formation are sequences of events, involving biogeochemical reactions that are energized by climate and spatially related to relief and topography (Buol and others, 2011). The physical and chemical properties of a soil are altered by these reactions over time.

The influence of each of the soil-forming factors varies. Soils may differ significantly from place to place in a park and within very short distances as a result of complex interaction among the five factors. In some instances, however, parks may have vast stretches of the same type of soil because of uniform soil-forming factors.

## Parent Material

The unconsolidated mass in which soils form is called “parent material.” Mineral soils are a product of the weathering of underlying bedrock in place or the weathering of material that has been transported. Organic soils form in place from the accumulation and decomposition of plant material, such as wood, leaves, and aquatic plants. Weathering refers to the chemical and physical disintegration and decomposition of the parent material. Few soils weather entirely from the underlying rocks. More commonly, soils form in materials that have been transported from elsewhere. Soils generally have a dominant kind of parent material but are influenced by other types of parent material. Material that has been moved by gravity is called colluvial material. Material that has been moved by running water is called alluvial material. Lacustrine deposits are a type of parent material deposited by lakes and ponds. Soils are said to have residual parent material if they formed directly from underlying rocks or from an in situ plant source. Soils that formed in residuum may have the same general chemistry as the original rocks, depending on the degree of weathering that has occurred. Material that has been moved primarily by wind is called eolian material. Windblown sand is an example. Windblown loess, which has been blown for long distances, consists mainly of very fine sand and silt-size particles. Till and outwash are parent materials that were moved by glaciers and glacial waters.

## Till

Till is soil parent material transported and deposited by glaciers. It consists dominantly of unsorted and unstratified material deposited directly by a glacier without subsequent reworking by meltwater. It is a heterogeneous mixture of clay, silt, sand, gravel, stones, and boulders. Till has rock fragments of various lithologies imbedded within a finer matrix (USDA–NRCS, 2008). The rock fragments generally are angular, but can also be subrounded or rounded. The composition of the till depends on the geology of the area over which the ice passed before the till was deposited. The till in turn affects soil properties, including kind and amount of rock fragments, color, texture, mineralogy, and pH. Figure 7 depicts a landscape near Millbrook Village, which is in the southern part of the park where red tills are found. Till deposits from the most recent Pleistocene glacier extend about 10 miles south of the Delaware Water Gap. Other glaciers of Early Pleistocene age also advanced into the park region.



**Figure 7.—A rounded landscape in an area of Lackawanna and Wellsboro soils. Both soils are nearly level to steep. Slopes range from 0 to 55 percent. The soils formed on glaciated uplands in red till derived from sandstone, siltstone, and shale. Both soils have a fragipan.**

Many types of till have served as parent materials for the soils in the park. The different till parent materials and landforms are listed in table 5 “Landscape, Landform, and Parent Material.”

Basal till is unconsolidated material of mixed composition deposited at the base (bottom) of a glacier. The Volusia soils in the park formed in basal till and tend to be finer than most of the other soils that formed in till. Ablation till is a general term for loose, relatively permeable, earthy material deposited during the downwasting of nearly static glacial ice, and is either contained within or accumulated on the surface of the glacier. Soils that formed from ablation till include Lackawanna, Morris, and Oquaga.

Different tills are on different landforms. The common tills in the park were deposited as till plains composed of either ground moraines or recessional moraines. A till plain is a broad landscape that forms when a sheet of ice melts in place and deposits the sediments it carried. It is an extensive, flat to gently undulating area underlain predominantly by till and bounded on the distal end by a recessional or end moraine. A ground moraine landform is commonly an extensive, low-relief area of till having an uneven or undulating surface and is commonly bounded on the distal end by a recessional or end moraine (USDA–NRCS, 2008). Soils that formed on ground moraines include Arnot, Lordstown, Swartswood, and Wurtsboro.

Till can be transported great distances by a glacier, or it can be of local origin. For example, the Walpack soils are found only on the Walpack Ridge (fig. 8). These soils formed in till derived from the shale and limestone bedrock of the ridge's mixed rock types (USDA–NRCS, 2009).



**Figure 8.—Hoosic and Hazen soil landscape in the foreground. These soils formed in glaciofluvial deposits on a landscape known as a “valley train.” Walpack Ridge is to the right in the background. The ridge is covered by Walpack soils, which are mantled with till. The ridge is erosion-resistant and exhibits higher elevation and steeper slopes than the glaciofluvial deposits. The ridge deflected the flow of the Delaware River to the southwest from a previous southeast direction.**

Till-derived soils in the park include Arnot, Bath, Farmington, Galway, Lackawanna, Lordstown, Manlius, Morris, Nassau, Oquaga, Volusia, and Wellsboro. Arnot and Lordstown soils are predominately on Kittatinny Mountain. They formed in till derived from the red sandstone of the Upper Silurian Bloomsburg Red Beds and conglomerate of the Middle and Lower Silurian Shawangunk Formation (USDA–NRCS, 2009). Hillslopes composed of till typically have a distinctive margin with terrace soils as seen near the Town Creek picnic area in figure 9. Oquaga and Lackawanna soils are till-derived and are located together on ground moraines in the southeastern part of the park as illustrated in figure 10. Manlius and Nassau soils are mainly in the northern and western parts of the Kittatinny Valley. They formed in till derived from shale bedrock that underlies parts of the valley. Conversely, the Farmington, and Galway soils are in the eastern and south-central parts of the Kittatinny Valley. They formed in





**Figure 9.—Manlius and Arnot soils on a hillslope and Philo and Wyalusing soils on a terrace near the Town Creek picnic area.**



**Figure 10.—Oquaga and Lackawanna soils on ground moraines near the Karamac parking area. Oquaga soils have a high content of rock fragments. Lackawanna soils have a lower content of rock fragments.**

till derived from the limestone and dolomite bedrock that underlies the valley. Dekalb and Weikert soils also formed in a combination of till and residuum, and Buchanan, Clymer, and Laidig soils formed in a combination of mostly till and colluvium (USDA–SCS, 1981).

### **Alluvium**

Alluvium is material deposited by running water. Alluvium can have different textures, depending on the speed of the water. Slow-moving water deposits fine textured material (clay and silt) as the sediments in the water settle out. Fast-moving water deposits gravel, cobbles, and sand. The type of rocks in the source region for the streams and rivers determines some characteristics of the alluvium.

Postglacial alluvial deposits were laid down during the Pleistocene and Holocene Epochs of the Quaternary period as the glaciers retreated. The glacial and postglacial environments affected the morphology of the Delaware River Valley. Increased precipitation enhanced downcutting and erosion. Eroded materials were deposited by the river elsewhere. These alluvial deposits further weathered in place on river terraces to form some of the soils currently in the park.

At the beginning of glacial recession, the Delaware River was a braided stream fed by meltwater from the receding glaciers. The river became more linear after the glaciers fully retreated from the Upper Delaware Valley. During the river's development, alluvium was deposited as stream terraces on successive flood plains. Each flood plain was abandoned by the continual incising of the river into lower deposits and the lowering of the water level of the river (Witte, 1997). Colonie, Delaware, Phelps, Scio, and Unadilla soils formed from these postglacial alluvial deposits on terraces. Because of favorable characteristics, these soils have historically been used for agriculture as they are on elevated terraces that are not subject to frequent flooding. Most of the map units on high river terraces are prime farmland. Table 3 lists the map units that have favorable farmland classifications. Park-administered agricultural leases in the park are usually on the higher elevation river terraces (fig. 11).

Fluvaquents, Fluvents, Udifluvents, Barbour, Holly, Philo, Pope, Suncook, Wayland, and Wyalusing soils all formed in postglacial alluvium in the lower positions on flood plains and all have variable risks for flooding. The Pope soil is also found extensively on the major islands in the river. Table 19 lists the frequency and duration of flooding and ponding for the dominant soils in each map unit.

Craigsville and Wyoming soils are typically associated in nearly level or gently sloping positions along the major tributaries to the Delaware River. Craigsville soils formed in alluvium that washed from sandy and gravelly upland soils. Wyoming soils formed in a combination of alluvium and colluvium and are nearly level to very steep. Wyoming soils are on outwash terraces, moraines, kames, eskers, and valley trains. They formed in gravelly, water-sorted material derived from red and gray sandstone, siltstone, and shale. In the park, these soils are along Spackman's Creek, Tom's Creek, Hornbeck's Creek, Dingman's Creek, and Adam's Creek.

Figure 12 depicts some of the typical landscapes, parent materials, and soils in the park.

### **Outwash**

Outwash (glaciofluvial) deposits are stratified and sorted sediments (chiefly sand and gravel) removed or "washed out" from a glacier by meltwater streams and deposited in front of or beyond the end moraine or margin of a glacier. The coarser material is deposited nearer to the ice and consists of rock or soil parent material transported and deposited by meltwater running off a receding glacier.

Certain landforms are associated with outwash, and certain soils are associated with these landforms. An outwash plain is an extensive lowland landscape consisting





**Figure 11.—An area of Unadilla silt loam, 0 to 3 percent slopes, in the Delaware Valley. Areas of this soil are leased for corn production in some parts of the park. Unadilla soils formed in alluvium deposited by the Delaware River. The map unit is prime farmland. (USDA–NRCS, 2009).**



**Figure 12.—An area north of Shawnee, Pennsylvania, depicting the relationships between soil, landscape, and parent material in the park.**

of coarse textured, glaciofluvial material. An outwash plain commonly is smooth, generally has low relief, and largely retains its original gradient. A valley train is a long narrow body of outwash that was confined within a valley beyond a glacier. Soils on valley trains include Hazen, Hoosic, and Otisville (fig. 8).

Similarly to till, outwash can have a variety of particle sizes. However, like alluvial materials, the particle-size distribution of outwash depends upon the velocity of the meltwater carrying the sediment. In general, the higher the velocity of water, the larger the particle that the water can transport. Rock fragments in outwash are more commonly subrounded or rounded because they were tumbled and polished during transport. Soils that formed from outwash and till in this region of the country commonly have a high content of rocks.

The outwash deposits in the park were influenced by the source of the geologic materials being carried by water. Consequently, the geologic origin of the rock fragments in these outwash deposits can be more variable than the geologic origin of the rock fragments in till deposits. For example, although the Kittatinny Valley is underlain mainly by shale and limestone bedrock, the Fredon, Halsey, Hazen, Hoosic, and Otisville soils in the valley contain rock fragments consisting not just of limestone and shale but also of sandstone and conglomerate (USDA–NRCS, 2009). Other soils that formed in outwash in the park are Chenango and Braceville. Some soils in the park formed from a mix of outwash and alluvium. An example is the Sheffield taxadjunct.

### **Eolian Material**

Some soils in the park have eolian parent materials due to the past glacial and periglacial environments. Periglacial refers to conditions, processes, and landforms expected or found in areas adjacent to glaciers. These glacial and periglacial environments were subject to strong directional winds, mostly blowing to the southeast. The Colonie soil is on terraces along the eastern side of the Delaware River. The soil formed in a mix of postglacial sandy alluvium and some fine-sandy material blown up from the active and ancestral river channels. Some areas of these soils have a hummocky and obvious sandy appearance. Figure 13 shows corn stubble buried under eolian sand deposits. Some of the Walpack soils have a mantle of loess (high silt content) that was blown in and captured as a surface mantle on the soils. These mantled soils are on the west-facing slopes of Walpack Ridge where prevailing winds captured the silts.

### **Organic Residuum**

Organic deposits in the park consist of accumulations of decomposed plant material in postglacial lakes and ponds and in depressions called “kettles.” Kettles are depressions that formed by the melt-out of incorporated ice blocks on outwash plains and till plains. Over time, these water-filled depressions filled with organic material derived from algae, sedges, rushes, and other water-tolerant plants. The plant residue accumulated because permanently wet conditions of the soils prevented oxidation and slowed decomposition.

The influence of organic residuum as a parent material is commonly a major factor in the development of highly carbon-sequestering ecological niches in the park. Soils that formed in these swamps have the same dark brown and black colors as the decomposed hydrophilic plant material from which they formed. A wet marsh landscape of mucky peat is near the park headquarters west of Depew Island. Catden, Freetown, and Paupack soils are also derived from residual organic deposits.

The content of organic carbon and inorganic carbon for each soil in the park is shown in table 17. The Conotton soils are the only soils in the park that have a measurable content of soil inorganic carbon (SIC). This SIC is probably derived from limestone. Soil organic carbon (SOC) originates from a biological source, such as plants, animals, or microorganisms. It makes up about one-half the weight of the





**Figure 13.—An area of Colonie loamy fine sand, 3 to 8 percent slopes, to the west of the Old Mine Road in New Jersey. Colonie soils are sandy. They formed in sandy alluvial material and windblown sand. The sand probably blew up from the ancestral Delaware River corridor during glacial and postglacial time.**

organic matter in a soil. The term “soil organic carbon” refers only to the carbon in organic matter. Soil inorganic carbon is the carbon in soil carbonates, typically as calcium carbonate in layers or as clay-sized fractions throughout the soil. Carbonates in soils are most common in areas where evaporation rates exceed precipitation rates, as in most desert environments in the western United States. Generally, the carbonates in those dry areas accumulated from carbonatic dust or from carbonate-containing parent material.

The Freetown soil has the highest content of soil organic carbon of any soil in the park. Based on current data, a Freetown soil has 170 kilograms of soil organic carbon per square meter (to a depth of 2 meters). That equates to about 750 tons of stored carbon per acre of land where the map unit is 100 percent Freetown soil. The Freetown soil is very poorly drained. It is mapped on the divide between Adams Creek and Dry Brook directly south of Long Meadow Road where the road turns sharply to the west.

Processes by which carbon is withdrawn from the atmosphere and sequestered in soil are called “carbon sequestration.” Atmospheric carbon dioxide ( $\text{CO}_2$ ) and methane ( $\text{CH}_4$ ) are greenhouse gases. Soil carbon sequestration transfers carbon dioxide from the atmosphere to the soil.

Humification is one process by which soil organic carbon becomes sequestered. Humification occurs when organic matter, such as leaves, wood, roots, and animals, is decomposed and converted to humic substances. Humic substances are broadly defined as products of organic matter decomposition that are relatively resistant to further microbial decomposition. Humic substances containing a high content of carbon can persist in the soil for thousands of years. Examples of humic substances are humic and fulvic acids and humins. Humification is common in depressions in the park.

Burial is also a process of carbon sequestration. Soil organic carbon can be buried in various ways. Burial of carbon-containing soil layers limits the exposure of the

carbon to the atmosphere and microbial degradation, thereby preserving organic carbon in the soil. Floods along the Delaware River episodically bury, cover, and preserve old soil surface horizons with new sediment. Landslides along the hillslopes can also bury soil organic carbon.

Erosion is a natural process that can also sequester carbon in soils. Removal of soil from one place often results in burial of soil in another place. Burial of soil horizons that contain soil organic matter sequesters that carbon in the soil.

## **Climate**

Past and present climate variations have significantly affected soil-forming processes in the park. Climatic factors, such as precipitation and temperature, have influenced the existing plant and animal communities and the physical and chemical weathering of the parent material. Temperature and moisture influence soil formation and are the two most commonly measured features of climate. Weathering is most active when soils are moist and warm because these soil conditions are conducive to rapid chemical reactions and increased biological activity in the soil. Cooler temperatures result in slower chemical reactions. Although average temperatures and precipitation are important in determining soil properties, the extremes of climate also have a major role in soil formation at any specific locale.

Glaciers advanced over the park during the last ice age and obliterated the existing vegetation and soils. The cold temperatures most likely prohibited or significantly reduced the rate of chemical reactions in the rock and soil material. As the temperature slowly increased and glaciers started to recede, the deposition of till and glaciofluvial material began. After the ice retreated and the climate gradually warmed, deciduous forests eventually succeeded the preexisting vegetation. The warmer, humid climate increased the physical and chemical weathering of the parent material and the accumulation of organic matter. The formation and translocation of clay and the leaching of soluble compounds accelerated during this time.

During periods of rainfall or snowmelt, water carries dissolved or suspended solids through the soil in a process called "leaching." The leaching process becomes active with the onset of rainfall or snowmelt. Variations in temperature and moisture cause variations in weathering and leaching in the soil. Seasonal and daily changes in temperature affect moisture effectiveness, biological activity, rates of chemical reactions, and kinds of vegetation.

The areas adjacent to glaciers, or periglacial areas, had intensified hillslope weathering during the ice ages (Means, 1995). The past periglacial environments in the park included discontinuous permafrost, tundra-like vegetation, and many freeze-thaw cycles due to proximity to the glacial environment. Freeze-and-thaw cycles led to ice-wedging of boulders and small rocks. During the day, water would melt and seep into soil and cracks. At night, the water would freeze, expand, and force the rocks apart. Movement of the rocks and soil created talus piles lower on the slopes. Large, water-saturated masses of rock and soil would slowly slide downward in lobes over frozen or partially frozen ground in a process known as solifluction.

## **Present-Day Climate**

Currently, the soils in the park are usually moist (they have a udic soil moisture regime) and have a mesic soil temperature regime. Some soils in low-lying positions have an aquic (usually wet) soil moisture regime. Examples are Alden and Holly soils. The Alden soil is in depressions on till plains and has reduced iron due to the saturated environment. The Holly soil is in depressions on flood plains in backswamp positions (fig. 14). Reduced iron appears as grey material in the soil (fig. 15). Both soils are hydric (table 4). Some soils are seasonally wet because water movement within the profile is restricted by contrasting particle-size classes. The Fredon soils are an example. Tables 19 and 20 list distinguishing features of the soils.





Figure 14.—An area of Holly soil in a backswamp along the Delaware River. Holly soils are hydric.



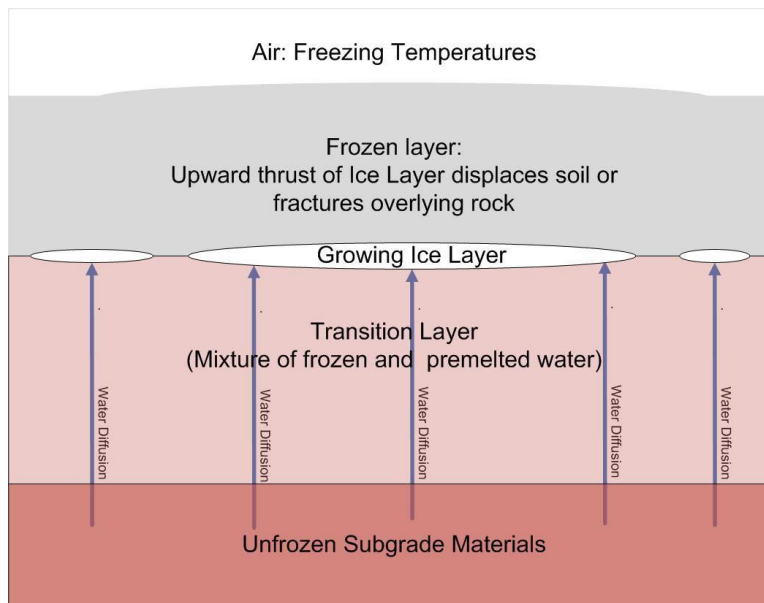
Figure 15.—A profile of a Holly soil. Holly soils are very deep and very poorly drained. They are on flood plains. The depth to the water table fluctuates with seasonal flooding in the river. Depths on the tape are in centimeters. (USDA–NRCS and USDI–NPS, 2013)

## Climate and Frost Heave

Many of the soils in the park have moderate or high susceptibility to frost heave. Frost heave is a natural pedogenic process that breaks up and mixes the surface of the soil. Table 20 categorizes the potential for frost heave as low, moderate, or high "Potential for frost action." The Chippewa, Freetown, Holly, Norwich, Shohola, Volusia, and Wellsboro soils in the park are rated as having a high potential for frost action. Many soils in the park have a dense layer, called a "fragipan," that supplies the source of water for frost heave above the pan.

Frost heave results from ice forming beneath the surface of soil during atmospheric freezing conditions. The ice grows in the direction of heat loss, which is vertically toward the surface, starting at the freezing boundary in the soil. Frost heave requires a water supply to keep feeding the growth of ice crystals. The growing ice is restrained by overlying soil, which applies a load that limits vertical growth and promotes the formation of lens-shaped areas of ice within the soil. Figure 16 illustrates the formation of ice lenses (Williamborg, 2009). The process of frost heave was more intense during glacial times than it is today.

Frost heave can result in potholes, cracked pavements, and cracked foundations. Table 9 indicates which map units and soils are limited as a site for roads and streets



**Figure 16.—Diagram illustrating formation of ice lenses that result in frost heave or frost action (Williamborg, 2009).**

due to frost action. The limitation results in higher maintenance costs for roads and parking lots.

Present-day climate variations are the result of topography and relief. In most areas of the United States, temperature generally decreases with elevation and precipitation generally increases with elevation. As elevation increases, the amount of precipitation, the extent of leaching, and the amount of vegetation generally increase up to a point where decreasing temperatures reverse the trend. The colder temperatures result in less leaching because of decreased microbial growth, decreased vegetation, and possibly frozen soil. Fluctuations in temperature and moisture affect the rate at which organic matter is produced, decomposed, and accumulated and the rate at which minerals are weathered.



Some areas of the country have climates that make the areas susceptible to wildfires. Wildfires are less common in this park than in parks in the western United States but can occur during periods of drought. Wildfires can alter physical and chemical properties of the soil. Erosion can be accelerated by the loss of vegetation and ground cover. Slopes can be destabilized by increased runoff after fires.

## Organisms

Plants, animals, microorganisms, and humans affect the formation and shape of soils. Plants capture solar energy via photosynthesis and transfer that energy to the soil, energy that is a fundamental driver of many soil processes. Fungi and bacteria are the primary organisms that decompose organic matter and add nutrients to the soil. Animals and microorganisms mix soils and form burrows and pores. Abandoned animal burrows commonly are filled with loose material from the overlying horizons and transmit water more readily than the surrounding undisturbed soil material. Microorganisms affect chemical exchanges between roots and soil. Bacteria, fungi, and many other microorganisms decompose organic matter and release nutrients to growing plants. They influence the formation of soil structure. Soil properties, such as drainage, temperature, and reaction, influence the type of microorganisms that live in the soil. Fungi are generally more active in the more acid soils, while bacteria are more active in the less acid soils.

Plant roots open channels in the soils. Different types of roots have different effects on soils. Grass roots are fibrous and decompose easily, adding organic matter to the soil. Fine grass roots can extend below the surface for many feet. Plant roots also help to develop soil structure and aggregate stability. Vegetation increases soil stability by protecting the surface against wind erosion and water erosion. Taproots open pathways through dense layers.

The vegetation under which a soil forms influences soil properties, such as color, structure, reaction, and content and distribution of organic matter. Vegetation extracts water from the soil, recycles nutrients, and adds organic matter to the soil. Gases derived from root respiration combine with water to form acids that influence the weathering of minerals. Soils that formed under forest vegetation generally have a lower content of organic matter than soils that formed under grasses. The forest soils are therefore generally lighter colored. The variety of soil types, the differences in exposure to the sun, and the variations in temperature and moisture create hundreds of microhabitats that support diverse communities of plants.

The large plants in the forested ecosystem in the park affect soil formation. Tree roots help break up rocks, resulting in channels that increase water penetration. The shallow Benson soil is associated with hard rock outcrop that is slowly being fractured by tree roots. Trees that are blown down help mix the soil when their roots are exposed. Trees capture energy and substance through photosynthesis, by the decomposition of plant residue, and by forming organic-mineral complexes that are recycled many times within the ecosystem (Buol and others, 2011).

The native vegetation depends on climate, topography, and biological factors plus soil factors, such as soil density, depth, chemistry, temperature, and moisture. The dominant coniferous tree in the park is eastern hemlock, which is the Pennsylvania State tree. Eastern hemlock is an important component of the forest canopy in stands covering approximately 2,800 acres (about 5 percent) of the park. The species thrives in damp, cool soils in shady microclimates and has shallow roots that are vulnerable to ground fires, erosion, drought, heavy snows, high winds, and human encroachment. Common deciduous trees in the park include white oak, red maple, and shagbark hickory. Forest communities of river birch are on wet soils along creeks, lakes, and the Delaware River. These trees help to minimize soil erosion along the banks of

waterways. A common shrub is mountain laurel, which is the Pennsylvania State flower and blooms in June. Mountain laurel thrives in the acidic soil of hemlock ravines.

Leaves from plants fall to the surface and decompose on the soil. Organisms decompose these leaves and mix them with the upper part of the soil, resulting in cycling of nutrients and energy back to vegetation. The leaf litter, both leaves and needles, helps prevent nutrient loss, conserves soil moisture, reduces raindrop impact, and limits frost penetration.

Human activities have significantly influenced soil formation in the park. Native forests have been cleared and developed for farming and other uses. Cultivation has accelerated erosion on sloping soils; wet soils have been drained; and manure, lime, chemical fertilizers, and pesticides have been applied in cultivated areas. Cultivation has changed soil structure, increased compaction, and lowered the content of organic matter. Figure 17 shows an area where cobbles from the soil surface have been stacked to build stone walls and to clear fields for agriculture. Agriculture plays an important role in managing the landscape of the park today. Nearly 3,000 acres are leased for agricultural production in the park. These leased lands provide food and shelter for wildlife and help preserve the rural character of the landscapes in the river valley. Corn, wheat, hay, and oats are the chief crops grown in the park. Without farming, the fields would quickly turn into forest. Farmed fields are part of the cultural landscape and depict the historical appearance of some areas of the park.

## Time

Time is an important factor affecting soil formation. Over time, soils exhibit features that reflect the interaction of the other soil-forming factors. Recently deposited material, such as material deposited by a flood, does not exhibit features from soil development activities and has properties that are unchanged by soil formation. If the previous surface soil and underlying horizons become buried, the clock resets for formation of the soil. The different horizons in a soil profile and the degree of



**Figure 17.—A rock wall built in an old field that has been cleared of cobbles by human activities near Millbrook Village.**

development can be directly related to time. Terraces above an active flood plain, while similar in origin to the flood plain, are older land surfaces. The soils on the terraces therefore exhibit more horizon development than the soils on the flood plains. The least developed soils in the park formed in postglacial alluvium, which comprises the youngest geomorphic surfaces of river terraces and flood plains and includes the alluvium along the Delaware River. Fluvaquents, Udifluvents, and Atherton, Colonie, Delaware, Holly, Scio, Unadilla, and Wallkill soils are on this landscape. These soils tend to have weakly expressed horizons because the soil-forming processes are interrupted with each new deposition of fresh alluvium. Glaciers advanced over the area that is now the park and reached a maximum extent roughly 22,000 years ago. They then receded. The glacial deposits are geologically young, but enough time has elapsed for the initial parent material to weather into soils that have distinct horizons.

A model describing how time has acted as a soil forming factor and the resultant degree of horizonation in the soils in the park can be developed by looking at specific soils. The youngest soils in the park in terms of "soil age" are the Fluvents, Fluvaquents, Holly soils, and Udifluvents. These soils have minimal soil horizonation and different parent materials. All of these soils are on the flood plains at the lowest elevations, are subject to flooding, and are classified as Entisols, which are the least developed soils.

Next in terms of age are the soils in the higher positions on flood plains. They are more stable because they are rarely flooded, so they have had more stable soil-forming time to develop horizonation as compared to the Fluvents. These soils have a simple ABC profile. Craigsville, Delaware, Philo, Pope, and Wyoming soils are examples. The B horizon is a subsoil zone of accumulation of materials moved from O, A, or E horizons or of soil material formed in place. Most of these soils have been farmed and therefore do not have an O horizon. Color has an important part in distinguishing the B horizon, which is the horizon of maximum accumulation of dissolved or suspended materials, for example, iron, clay, or calcium carbonate. Not all soils have a B horizon. The B horizon in the soils in the higher positions on flood plains show some color change and weak structure. These soils are Inceptisols.

Next in terms of degree of development, or "age," are the Brinkerton soils, which formed in colluvium derived from acid gray shale and siltstone. The nearly level to sloping Brinkerton soils are on concave footslopes and around heads of drainageways. These soils have ABC horizonation and have greater development than the Inceptisols mentioned above. The Brinkerton soils have stronger structure than the Inceptisols and have a zone of clay accumulation in the B horizon. The Brinkerton soils have moderately slow permeability in the upper part of the B horizon and slow permeability in the fragipan. The restricted permeability results in seasonal wetness in the soil. The Brinkerton soils are classified as Alfisols. Other soils that have translocated clay are Hazen, Phelps, Venango, and Wallpack soils.

Bedington, Buchanan, Clymer, Cookport, and Laidig soils are examples of the soils that could be considered the "oldest" in terms of soil profile development. They have different subsoil chemistry than the Alfisols due to leaching of cations. Alternatively, the parent material may have had fewer cations available to leach initially than the parent materials of the Alfisols. As mentioned earlier, the other soil forming factors influence how we perceive time of formation or soil age. Most of the soils in the park are Entisols, Inceptisols, or Histosols (organic soils). There are Alfisols and Ultisols of minor extent in the southern portion of the park, south of the Delaware Water Gap. These Alfisols and Ultisols are typically minor components of map units and are in landscape positions that may not have been glaciated. Because of the amount of time available and the weathering conditions, soils would not have developed to Ultisols or Alfisols since the last glaciation. It is significant that Ultisols and Alfisols are only south of the Delaware Water Gap. This suggests the degree of glaciation was less south of the gap, and some landscape positions may have been spared being scraped by the ice.



Although the exact origin or genesis of these older soils is difficult to determine, a couple scenarios may be proposed for the presence of Ultisols and Alfisols directly south of the Delaware Water Gap. This area is in the vicinity of the terminus of the Wisconsinan continental glacier that receded from the area approximately 22,000 years ago. The forces of glacial erosion were not as strong near the terminus of a glacier due to thinning of the ice sheet, which is the result of the ice melting as it advanced. Because of this reduction in erosive power, pre-existing soils in the area may not have been as affected by the glacier as the soils farther north. In some places, the pre-existing soils may have been completely unaffected. This may explain why residual soils, such as Bedington, Brinkerton, Clymer, and Cookport soils, are found in this part of the park—they were not destroyed or displaced by the glacier.

The colluvial Buchanan and Laidig soils are Ultisols. As with the residual soils, they may be pre-existing soils that were left partly or fully undisturbed due to their proximity to the terminus of the glacier. Alternately, they may be the result of the glacier reworking pre-existing soils that were not completely obliterated but instead were displaced and redistributed within short distances. These pre-existing soils would have possessed the physical and chemical properties that are more typical of Ultisols. These properties may have remained intact even after the soils were reworked by the glacier, resulting in the formation of Wisconsinan-age soils that have the physical and chemical properties of much older soils but are best described as Ultisols. As these pre-existing soils were locally displaced and redistributed, the parent material created by their disturbance may have had morphology consistent with soil material transported downslope by gravity. The soils, therefore, are considered colluvial deposits, even though the overall mechanism of their transport may have been local transport by the glacier.

## Topography and Relief

Topography refers to the shape of the landscape, and relief refers to differences in elevation. The overall landscape of an area, including river terraces, rolling hills, and steep mountains, is the result of erosion and depositional processes. These processes may have occurred in response to changes in climate, fluctuating sea levels, and tectonic activities. Cyclic periods of landscape stability and instability influence the types of soils that form.

Relief influences soil formation mainly through its effect on runoff and erosion. It also influences soil temperature, plant cover, depth to a water table, and the accumulation and removal of organic matter. Water that runs off the more sloping soils can collect in depressions or drainageways. Because relief causes differences in external soil drainage, relief can differentiate soils that formed in the same kind of parent material. The Alden and Swartswood soils in the park illustrate this differentiation. These soils both formed in till derived from sandstone and conglomerate. The nearly level to steep Swartswood soils are well drained. They are on upland summits and side slopes where there is external drainage. The nearly level Alden soils are very poorly drained. They are in depressions and drainage ways that receive runoff from the upland areas.

Slope and aspect of the overall landscape can affect the moisture and temperature of the soil. Like a south-facing side of a house is warmer than a north-facing side, steep slopes facing the sun are warmer than more level soils facing other directions. Steep soils can erode and lose their surface horizons as they form. Thus, steeper soils may be thinner than more nearly level soils that receive deposits from areas upslope. Deeper, darker soils may be expected on the bottom land. Soil-forming factors continue to affect soils even on “stable” landscapes. Materials are deposited on their surface, and materials are blown or washed away from their surface. Additions, removals, and alterations can be slow or rapid, depending on climate, landscape position, and biological activity.

Relief varies greatly in the park. On the alluvial deposits in the Delaware Valley, the soils generally have broad, gentle slopes. Some areas along the river are nearly level. The glaciofluvial deposits in both the Upper Delaware Valley and the Kittatinny Valley also formed soils having broad, gentle slopes. Some steep slopes are present as well.

Relief is more pronounced on Walpack Ridge, on Kittatinny Mountain, and in some areas of shale and limestone in the Kittatinny Valley. The relief is affected by the bedrock-controlled topography and consists of steep side slopes and undulating summits. The differences in relief in the bedrock-controlled areas are due to differences in resistance to destruction by the glacier. Hard bedrocks, such as the conglomerate of the Shawangunk Formation that makes up Kittatinny Mountain, were not broken apart and carried away by the glacier (Witte, 1997). The glacier did, however, polish these bedrock types as it passed over. The resistance of the rock to glacial action left behind the prominent ridge of Kittatinny Mountain. Conversely, the shale and limestone in the Kittatinny Valley were less resistant to destruction, so the glacier gouged deep valleys into these types of bedrock. Some of the valleys were subsequently filled with glaciofluvial deposits as the melting glacier receded (Witte, 1997). In parts of the Kittatinny Valley where the bedrock was not broken off and carried away, the glacier left rounded knolls of shale bedrock and jagged outcroppings of limestone bedrock. This accounts for Walpack Ridge in the park.

The Pennsylvania side of the Delaware River has a steep escarpment running east of the Mosiers Knob Road. On the top of the escarpment are the shallow Benson soils, which are associated with rock outcrop, and the deeper Mardin soils, which have a fragipan. Lackawanna and Bath soils are along the sides of the escarpment, which grades down to Wyoming and Pope soils on terraces and flood plains. Udifluvents are on low-lying islands. The Pope soil is on the vegetated islands in the river that have greater relief and better drainage than the lower lying islands. Figure 18 illustrates typical relationships of soil and landscape in this area of the park.

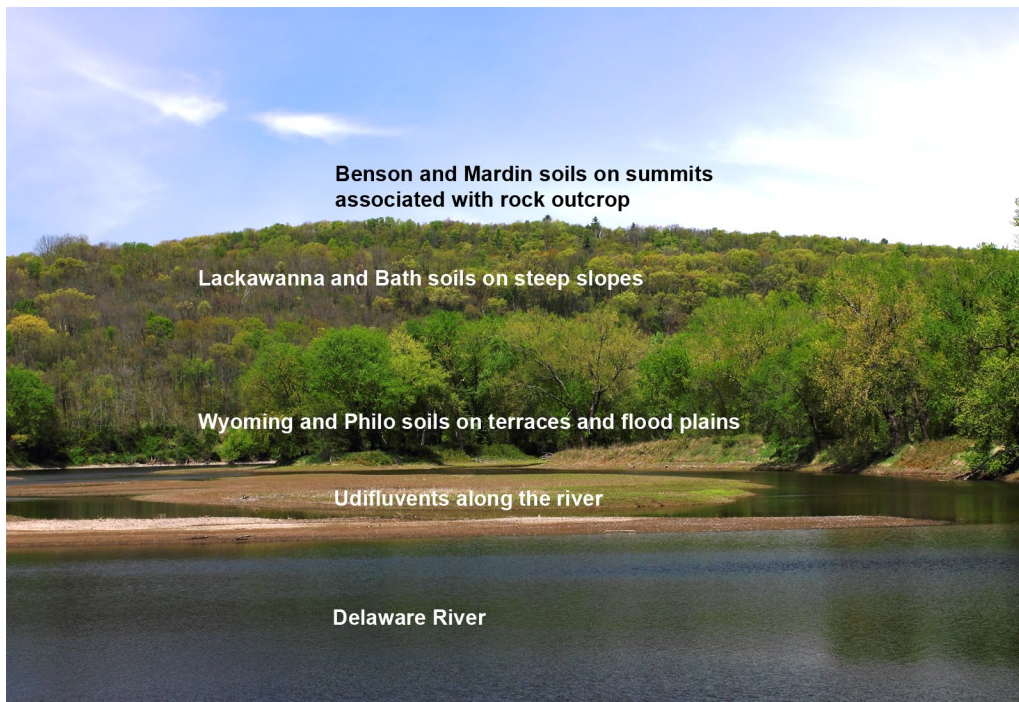


Figure 18.—Relationships of soils and landscape position on the Pennsylvania side of the Delaware River near the boat ramp on the Poxono River.

If left unvegetated, most of the soils in the park are affected by slope instability and high erosion rates. The geologic units underlying the slopes of the park contain a heterogeneous mix of shale, sandstone, siltstone, limestone, dolomite, conglomerate, and mudstone. Clay-rich units (e.g., shale and mudstone) may disintegrate when they become saturated and are prone to fail when exposed on a slope. Where more resistant rock units, such as conglomerates, sandstone, and limestone, are located above weaker units, undercutting occurs due to preferential erosion and can cause rock fall hazards. The Dekalb series is an example of soils that are moderately deep, well drained, and formed in residuum from interbedded shale and siltstone. These soils are on gently sloping to very steep, dissected mountain uplands.

Figures 19, 20, and 21 are stylized block diagrams of the typical soils and landscapes in the park. Some landscape positions and parent materials favor the development of certain profile characteristics or diagnostic horizons. Brinkerton, Clarksburg, Comly, Cookport, Readington, Venango, and Wallpack soils all have a dense horizon called a “fragipan.” Fragipans are common in this part of the northeastern United States. The fragipan has a low content of organic matter and a high bulk density in relation to other horizons above it. The fragipan restricts water movement through the soils. The effects of restricted water movement can be seen in soil profiles as grey colors. It is not known exactly how and why fragipans form, but some generalizations can be made about them. They show evidence of pedogenesis, usually as clay movement; they have a higher content of silt and/or very fine sand than geographically associated soils without fragipans; they occur at depths where the soil does not freeze; and they typically formed under forested vegetation (Soil Survey Staff, 1999). All soils that have a fragipan are named with “fragi” as part of their taxonomic classification (tables 21 and 22).

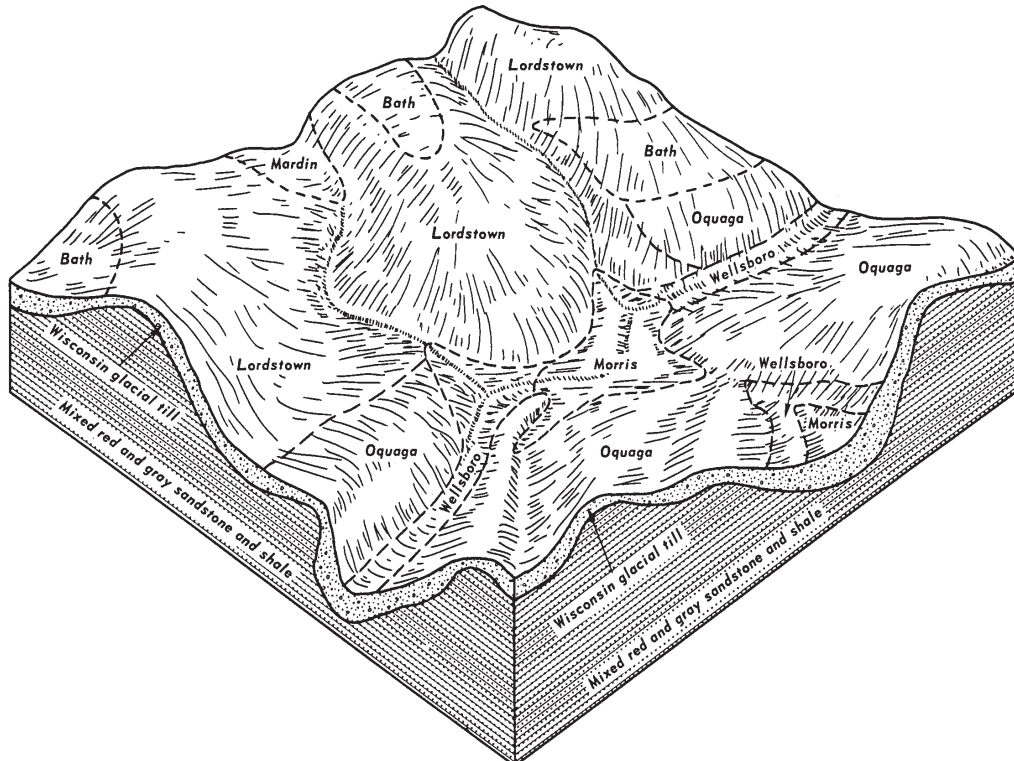


Figure 19.—Typical relationship of soils to parent material, underlying rock formations, and landscape position in the northern part of the park, east of the Delaware River. This diagram was originally published in the Soil Survey of Monroe County, Pennsylvania (USDA–SCS, 1981).



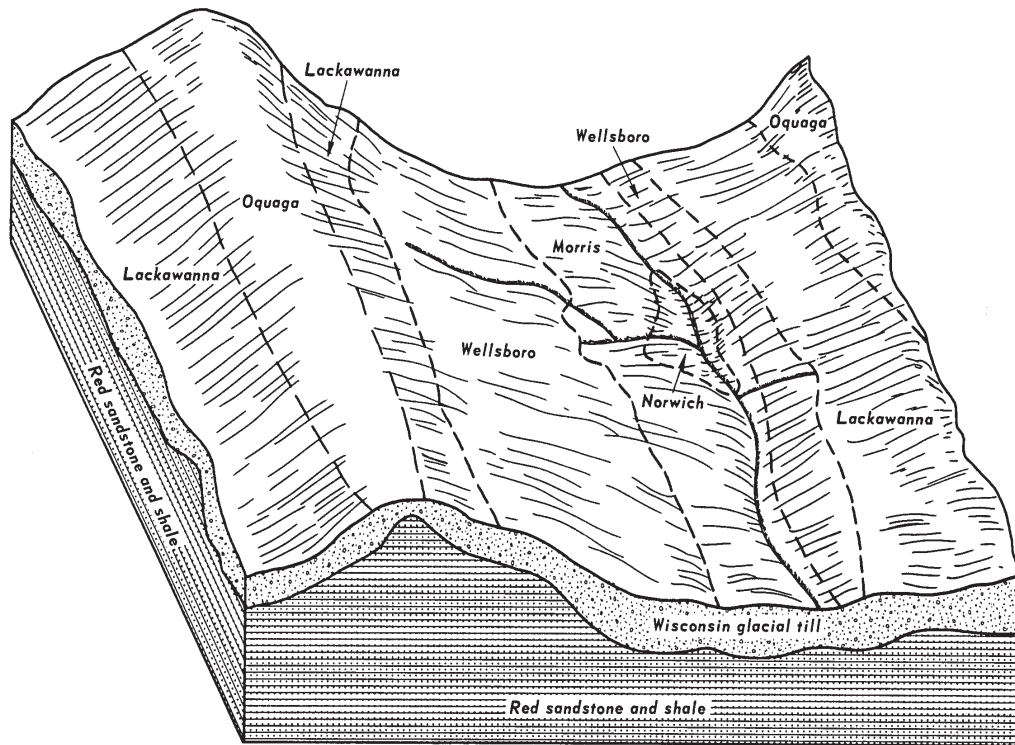


Figure 20.— Typical relationship of soils to parent material, underlying rock formations, and landscape position. The Norwich soils are of minor extent in the survey area. This diagram was originally published in the Soil Survey of Monroe County, Pennsylvania (USDA-SCS, 1981).

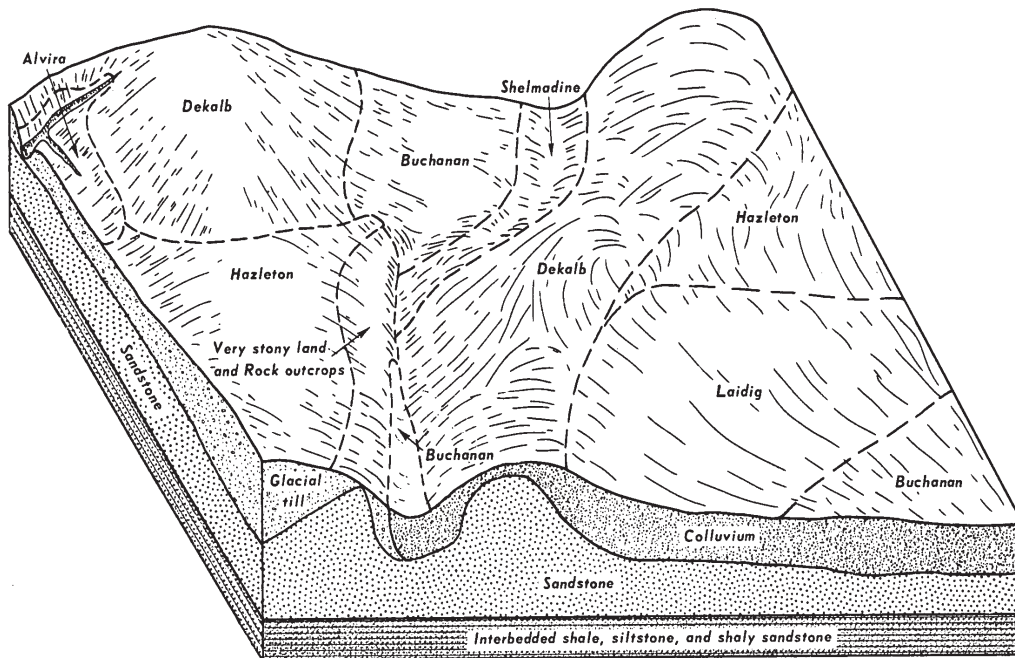


Figure 21.— Typical relationship of soils to parent material, underlying sandstone, and landscape position. This diagram is pertinent to park lands south of the Delaware Water Gap near Mt. Minsi. This diagram was originally published in the Soil Survey of Monroe County, Pennsylvania (USDA-SCS, 1981).

## Processes of Soil Horizon Differentiation

The soil profile provides a record of the activities of the five soil-forming factors. It consists of a succession of layers, or horizons, extending from the surface down to the parent material. The horizons differ in one or more properties, for example, thickness, color, texture, structure, consistence, porosity, and reaction (pH).

Numerous processes of soil formation result in the development of soil horizons (Buol and others, 2011). In the park, some of the main processes are lessivage, enrichment, decomposition, synthesis, and leaching. Lessivage is the physical movement of small mineral particles from one area of the profile to another. An example is movement of small clay particles downward in the profile. Enrichment is the addition of material to soil, such as the addition of fine sand and silt to the surface of the Walpack soils on Walpack Ridge or the addition of plant litter to the surface of forested soils, such as Swartswood soils. Decomposition is the breakdown of minerals or organic material to new, more stable materials. Synthesis is the formation of new minerals or organic materials. Leaching is the translocation of materials in solution from one horizon to another or their removal from the soil entirely.

Soil profiles commonly consist of up to six major horizons or layers, designated as O, A, E, B, and C horizons and R layers.

The O horizon consists of decomposing organic materials.

The A horizon is a mineral horizon that has a higher content of organic matter than that of the underlying horizons but less than that of the overlying O horizons. The A horizon may be the surface layer if there is no O horizon.

The E horizon is a zone of maximum leaching of materials that are usually lighter in color than horizons above or below. It typically occurs in wetter climates or wetter soil conditions on certain landscapes.

The B horizon is a subsoil zone of accumulation of materials moved from O, A, or E horizons or of soil material formed in place. It is the horizon of maximum accumulation of dissolved or suspended materials, for example, iron, clay, or calcium carbonate. Color has an important part in distinguishing B horizons. Not all soils have a B horizon.

The C horizon is typically in the bottom part of a soil profile and has properties similar to those of the parent material. It can be at the surface in undeveloped soils, such as dune soils. The C horizon is relatively unchanged by the soil-forming processes. The C horizon in the Delaware soils is an example.

The R layer is hard bedrock, but it may be fractured. In the park, an R layer underlies many of the soils. Chert or sandstone bedrock is common. The Oquaga soils, for example, have an R layer.

## Pedogenesis in the Delaware soil

Delaware soils provide a good example to illustrate the factors of soil formation and the processes of soil horizonation, or “pedogenesis.” The type location for the Delaware series is in the park (page 392). Most of the acreage of Delaware soils is along the Delaware Valley river corridor. These soils formed in alluvium. They are mostly dark yellowish brown and are very deep. All five factors of soil formation can be identified in this soil as well as the soil-forming processes of lessivage, leaching, decomposition, enrichment, and synthesis.

### Interactions of Soil-Forming Factors

**Topography, parent material, and time.**—Delaware soils are on level terraces along the river. Because they are in relatively stable positions, they do not erode like the soils on steep uplands. Over time, the Delaware soils have become very deep and have developed some horizon differentiation. They formed in alluvium from the surrounding, eroding hillslopes and inherited their texture from soils eroding from the nearby hillslopes. The upland soils developed from conglomerates and sandstone.

Soil material has been moved from one area to another (enrichment). The change in color and structure is due to the process of lessivage, the process of decomposition of primary minerals, and the subsequent synthesis of new soil minerals and stabilized organic materials. Primary minerals are the unweathered, original minerals that comprise a rock.

**Topography, organisms, and climate.**—Delaware soils have a surface A horizon that is darkened due to its high content of organic matter. Decomposition of roots, leaves, and stems by soil microbes results in a surface horizon that is enriched with newly synthesized soil organic matter. The high content of organic matter is due to the higher plant productivity of the soils as well as to the wetter soil microclimate conditions that reduce the rates of organic matter oxidation. Map units containing Delaware soils are classified as prime farmland.

### **Soil Horizonation**

The typical pedon for the Delaware soil has an O horizon. In active farming areas, the O horizon is plowed and mixed into the A horizon. The A horizons in these soils have an accumulation of stable organic matter mixed with mineral soil material. The surface A horizons, as described by the soil scientists mapping the area, appear to have been plowed to a depth of 11 inches at some time in the past. The mixing of a soil is a soil-forming process called “pedoturbation.” The Delaware soils have two A subhorizons, both of which have been plowed. The plowing is indicated by the Ap designation in the typical pedon (page 393).

Below the Ap horizons, at about 11 inches below the surface, the Delaware soils have a B horizon. The B horizon extends to a depth 33 of inches. It formed due to lessivage resulting in change of soil structure.

Below the B horizon, at a depth of 33 to 41 inches, is a transitional BC horizon that displays more characteristics of the underlying parent material.

Below a depth of 41 inches, the Delaware soils have a C horizon that is relatively unaltered and closely related to the original glacial parent material.





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# Glossary

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Many of the terms relating to landforms, geology, and geomorphology are defined in more detail in the “National Soil Survey Handbook” (available in local offices of the Natural Resources Conservation Service or on the Internet).

**ABC soil.** A soil having an A, a B, and a C horizon.

**Ablation till.** Loose, relatively permeable earthy material deposited during the downwasting of nearly static glacial ice, either contained within or accumulated on the surface of the glacier.

**AC soil.** A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.

**Aeration, soil.** The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

**Aggregate, soil.** Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

**Alluvial fan.** A low, outspread mass of loose materials and/or rock material, commonly with gentle slopes. It is shaped like an open fan or a segment of a cone. The material was deposited by a stream at the place where it issues from a narrow mountain valley or upland valley or where a tributary stream is near or at its junction with the main stream. The fan is steepest near its apex, which points upstream, and slopes gently and convexly outward (downstream) with a gradual decrease in gradient.

**Alluvium.** Unconsolidated material, such as gravel, sand, silt, clay, and various mixtures of these, deposited on land by running water.

**Aquic conditions.** Current soil wetness characterized by saturation, reduction, and redoximorphic features.

**Aspect.** The direction toward which a slope faces. Also called slope aspect.

**Available water capacity (available moisture capacity).** The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low .....	0 to 3
Low .....	3 to 6
Moderate.....	6 to 9
High .....	9 to 12
Very high.....	more than 12

**Backslope.** The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

**Backswamp.** A flood-plain landform. Extensive, marshy or swampy, depressed areas of flood plains between natural levees and valley sides or terraces.

- Base saturation.** The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.
- Base slope** (geomorphology). A geomorphic component of hills consisting of the concave to linear (perpendicular to the contour) slope that, regardless of the lateral shape, forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).
- Bedrock.** The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.
- Bedrock-controlled topography.** A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.
- Bench terrace.** A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.
- Bottom land.** An informal term loosely applied to various portions of a flood plain.
- Boulders.** Rock fragments larger than 2 feet (60 centimeters) in diameter.
- Breaks.** A landscape or tract of steep, rough or broken land dissected by ravines and gullies and marking a sudden change in topography.
- Brush management.** Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.
- Calcareous soil.** A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.
- Canopy.** The leafy crown of trees or shrubs. (See Crown.)
- Capillary water.** Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.
- Cation.** An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.
- Cation-exchange capacity.** The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.
- Channery soil material.** Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a chanter.
- Chemical treatment.** Control of unwanted vegetation through the use of chemicals.
- Clay.** As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.
- Clay depletions.** See Redoximorphic features.
- Clay film.** A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.
- Claypan.** A dense, compact, slowly permeable subsoil layer that contains much more clay than the overlying materials, from which it is separated by a sharply defined boundary. A claypan is commonly hard when dry and plastic and sticky when wet.
- Coarse textured soil.** Sand or loamy sand.
- Cobble (or cobblestone).** A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.
- Cobbly soil material.** Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

**COLE (coefficient of linear extensibility).** See Linear extensibility.

**Colluvium.** Unconsolidated, unsorted earth material being transported or deposited on side slopes and/or at the base of slopes by mass movement (e.g., direct gravitational action) and by local, unconcentrated runoff.

**Complex slope.** Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

**Complex, soil.** A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

**Concretions.** See Redoximorphic features.

**Conglomerate.** A coarse grained, clastic sedimentary rock composed of rounded or subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer textured material. Conglomerate is the consolidated equivalent of gravel.

**Conservation tillage.** A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

**Consistence, soil.** Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."

**Control section.** The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

**Coprogenous earth (sedimentary peat).** A type of limnic layer composed predominantly of fecal material derived from aquatic animals.

**Corrosion (geomorphology).** A process of erosion whereby rocks and soil are removed or worn away by natural chemical processes, especially by the solvent action of running water, but also by other reactions, such as hydrolysis, hydration, carbonation, and oxidation.

**Corrosion (soil survey interpretations).** Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

**Cover crop.** A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

**Crown.** The upper part of a tree or shrub, including the living branches and their foliage.

**Delta.** A body of alluvium having a surface that is fan shaped and nearly flat; deposited at or near the mouth of a river or stream where it enters a body of relatively quiet water, generally a sea or lake.

**Dense layer (in tables).** A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

**Depth, soil.** Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

**Diatomaceous earth.** A geologic deposit of fine, grayish siliceous material composed chiefly or entirely of the remains of diatoms.

**Dip slope.** A slope of the land surface, roughly determined by and approximately conforming to the dip of the underlying bedrock.

**Diversion (or diversion terrace).** A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

**Drainage class** (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained*, *somewhat excessively drained*, *well drained*, *moderately well drained*, *somewhat poorly drained*, *poorly drained*, and *very poorly drained*. These classes are defined in the “Soil Survey Manual.”

**Drainage, surface.** Runoff, or surface flow of water, from an area.

**Drainageway.** A general term for a course or channel along which water moves in draining an area. A term restricted to relatively small, linear depressions that at some time move concentrated water and either do not have a defined channel or have only a small defined channel.

**Drift.** A general term applied to all mineral material (clay, silt, sand, gravel, and boulders) transported by a glacier and deposited directly by or from the ice or transported by running water emanating from a glacier. Drift includes unstratified material (till) that forms moraines and stratified deposits that form outwash plains, eskers, kames, varves, and glaciofluvial sediments. The term is generally applied to Pleistocene glacial deposits in areas that no longer contain glaciers.

**Drumlin.** A low, smooth, elongated oval hill, mound, or ridge of compact till that has a core of bedrock or drift. It commonly has a blunt nose facing the direction from which the ice approached and a gentler slope tapering in the other direction. The longer axis is parallel to the general direction of glacier flow. Drumlins are products of streamline (laminar) flow of glaciers, which molded the subglacial floor through a combination of erosion and deposition.

**Duff.** A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

**Dune.** A low mound, ridge, bank, or hill of loose, windblown granular material (generally sand), either barren and capable of movement from place to place or covered and stabilized with vegetation but retaining its characteristic shape.

**Eluviation.** The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

**Eolian deposit.** Sand-, silt-, or clay-sized clastic material transported and deposited primarily by wind, commonly in the form of a dune or a sheet of sand or loess.

**Ephemeral stream.** A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

**Episaturation.** A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

**Erosion.** The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

*Erosion* (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains.  
Synonym: natural erosion.

*Erosion* (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.



- Erosion surface.** A land surface shaped by the action of erosion, especially by running water.
- Escarpment.** A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Most commonly applied to cliffs produced by differential erosion. Synonym: scarp.
- Esker.** A long, narrow, sinuous, steep-sided ridge of stratified sand and gravel deposited as the bed of a stream flowing in an ice tunnel within or below the ice (subglacial) or between ice walls on top of the ice of a wasting glacier and left behind as high ground when the ice melted. Eskers range in length from less than a kilometer to more than 160 kilometers and in height from 3 to 30 meters.
- Fan remnant.** A general term for landforms that are the remaining parts of older fan landforms, such as alluvial fans, that have been either dissected or partially buried.
- Fertility, soil.** The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.
- Fibric soil material (peat).** The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.
- Field moisture capacity.** The moisture content of a soil, expressed as a percentage of the oven-dry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity*, *normal moisture capacity*, or *capillary capacity*.
- Fill slope.** A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.
- Fine textured soil.** Sandy clay, silty clay, or clay.
- Flaggy soil material.** Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.
- Flagstone.** A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.
- Flood plain.** The nearly level plain that borders a stream and is subject to flooding unless protected artificially.
- Flood-plain landforms.** A variety of constructional and erosional features produced by stream channel migration and flooding. Examples include backswamps, flood-plain splays, meanders, meander belts, meander scrolls, oxbow lakes, and natural levees.
- Flood-plain splay.** A fan-shaped deposit or other outspread deposit formed where an overloaded stream breaks through a levee (natural or artificial) and deposits its material (commonly coarse grained) on the flood plain.
- Flood-plain step.** An essentially flat, terrace-like alluvial surface within a valley that is frequently covered by floodwater from the present stream; any approximately horizontal surface still actively modified by fluvial scour and/or deposition. May occur individually or as a series of steps.
- Fluvial.** Of or pertaining to rivers or streams; produced by stream or river action.
- Foothills.** A region of steeply sloping hills that fringes a mountain range or high-plateau escarpment. The hills have relief of as much as 1,000 feet (300 meters).
- Footslope.** The concave surface at the base of a hillslope. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).
- Forest cover.** All trees and other woody plants (underbrush) covering the ground in a forest.



- Forest type.** A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.
- Fragipan.** A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.
- Genesis, soil.** The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.
- Glaciofluvial deposits.** Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur in the form of outwash plains, valley trains, deltas, kames, eskers, and kame terraces.
- Glaciolacustrine deposits.** Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are bedded or laminated.
- Gleyed soil.** Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.
- Gravel.** Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.
- Gravelly soil material.** Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.
- Ground water.** Water filling all the unblocked pores of the material below the water table.
- Hard bedrock.** Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.
- Hard to reclaim** (in tables). Reclamation is difficult after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.
- Hardpan.** A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.
- Head slope** (geomorphology). A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.
- Hemic soil material (mucky peat).** Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.
- Hill.** A generic term for an elevated area of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline. Slopes are generally more than 15 percent. The distinction between a hill and a mountain is arbitrary and may depend on local usage.
- Hillslope.** A generic term for the steeper part of a hill between its summit and the drainage line, valley flat, or depression floor at the base of a hill.
- Horizon, soil.** A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:  
*O horizon.*—An organic layer of fresh and decaying plant residue.

*L horizon*.—A layer of organic and mineral limnic materials, including coprogenous earth (sedimentary peat), diatomaceous earth, and marl.

*A horizon*.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

*E horizon*.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

*B horizon*.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

*C horizon*.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

*Cr horizon*.—Soft, consolidated bedrock beneath the soil.

*R layer*.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

**Humus.** The well decomposed, more or less stable part of the organic matter in mineral soils.

**Hydrologic soil groups.** Refers to soils grouped according to their runoff potential.

The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

**Illuviation.** The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

**Impervious soil.** A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

**Infiltration.** The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

**Infiltration capacity.** The maximum rate at which water can infiltrate into a soil under a given set of conditions.

**Infiltration rate.** The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

**Intake rate.** The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2 .....	very low
0.2 to 0.4 .....	low
0.4 to 0.75 .....	moderately low
0.75 to 1.25 .....	moderate
1.25 to 1.75 .....	moderately high
1.75 to 2.5 .....	high
More than 2.5 .....	very high

- Interdrumlin.** Concave to relatively flat-bottomed, roughly linear depressions ranging from small saddles or swales to small valleys that separate drumlins or drumlinoid ridges in drumlin fields. Streams, if present, have not had a dominant impact on the formation of the depression.
- Interfluve.** A landform composed of the relatively undissected upland or ridge between two adjacent valleys containing streams flowing in the same general direction. An elevated area between two drainageways that sheds water to those drainageways.
- Interfluve** (geomorphology). A geomorphic component of hills consisting of the uppermost, comparatively level or gently sloping area of a hill; shoulders of backwearing hillslopes can narrow the upland or can merge, resulting in a strongly convex shape.
- Intermittent stream.** A stream, or reach of a stream, that does not flow year-round but that is commonly dry for 3 or more months out of 12 and whose channel is generally below the local water table. It flows only during wet periods or when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.
- Iron depletions.** See Redoximorphic features.
- Irrigation.** Application of water to soils to assist in production of crops. Methods of irrigation are:
- Basin.*—Water is applied rapidly to nearly level plains surrounded by levees or dikes.
  - Border.*—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.
  - Controlled flooding.*—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.
  - Corrugation.*—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.
  - Drip (or trickle).*—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.
  - Furrow.*—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.
  - Sprinkler.*—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.
  - Subirrigation.*—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.
  - Wild flooding.*—Water, released at high points, is allowed to flow onto an area without controlled distribution.
- Kame.** A low mound, knob, hummock, or short irregular ridge composed of stratified sand and gravel deposited by a subglacial stream as a fan or delta at the margin of a melting glacier; by a supraglacial stream in a low place or hole on the surface of the glacier; or as a ponded deposit on the surface or at the margin of stagnant ice.
- Kame terrace.** A terrace-like ridge consisting of stratified sand and gravel (a) deposited by a meltwater stream flowing between a melting glacier and a higher valley wall or lateral moraine and (b) left standing after the disappearance of the ice. It is commonly pitted with “kettles” and has an irregular ice-contact slope.
- Knoll.** A small, low, rounded hill rising above adjacent landforms.
- K<sub>sat</sub>.** Saturated hydraulic conductivity. (See Permeability.)
- Lacustrine deposit.** Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.
- Lake terrace.** A narrow shelf, partly cut and partly built, produced along a lakeshore in front of a scarp line of low cliffs and later exposed when the water level falls.
- Landslide.** A general, encompassing term for most types of mass movement landforms and processes involving the downslope transport and outward

deposition of soil and rock materials caused by gravitational forces; the movement may or may not involve saturated materials. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

**Large stones** (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

**Leaching.** The removal of soluble material from soil or other material by percolating water.

**Linear extensibility.** Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at  $\frac{1}{3}$ - or  $\frac{1}{10}$ -bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

**Liquid limit.** The moisture content at which the soil passes from a plastic to a liquid state.

**Loam.** Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

**Loess.** Material transported and deposited by wind and consisting dominantly of silt-sized particles.

**Low strength.** The soil is not strong enough to support loads.

**Map unit.** A map unit is a collection of areas defined and named the same in terms of their soil components or miscellaneous (nonsoil) areas or both. Each map unit differs in some respect from all others in a survey area, and each has a symbol that uniquely identifies the map unit on a soil map. Each individual polygon, point, or line so identified on the map is referred to as a delineation.

**Map unit component.** A distinct kind of soil, generally a phase of a taxonomic unit, or miscellaneous (nonsoil) area within a soil map unit. Components can be categorized as either major or minor. The names of major components are used to name the map unit. Each component of a map unit has a unique set of soil properties that differentiates it from other components within the same map unit. Each is assigned a designated range in proportionate extent (percent) within the map unit.

**Marl.** An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal proportions; formed primarily under freshwater lacustrine conditions but also formed in more saline environments.

**Mass movement.** A generic term for the dislodgment and downslope transport of soil and rock material as a unit under direct gravitational stress.

**Masses.** See Redoximorphic features.

**Meander belt.** The zone within which migration of a meandering channel occurs; the flood-plain area included between two imaginary lines drawn tangential to the outer bends of active channel loops.

**Meander scar.** A crescent-shaped, concave or linear mark on the face of a bluff or valley wall, produced by the lateral erosion of a meandering stream that impinged upon and undercut the bluff.

**Meander scroll.** One of a series of long, parallel, close-fitting, crescent-shaped ridges and troughs formed along the inner bank of a stream meander as the channel migrated laterally down-valley and toward the outer bank.

**Mechanical treatment.** Use of mechanical equipment for seeding, brush management, and other management practices.

**Medium textured soil.** Very fine sandy loam, loam, silt loam, or silt.

**Mineral soil.** Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

- Miscellaneous area.** A kind of map unit that has little or no natural soil and supports little or no vegetation.
- Moderately coarse textured soil.** Coarse sandy loam, sandy loam, or fine sandy loam.
- Moderately fine textured soil.** Clay loam, sandy clay loam, or silty clay loam.
- Mollic epipedon.** A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.
- Moraine.** In terms of glacial geology, a mound, ridge, or other topographically distinct accumulation of unsorted, unstratified drift, predominantly till, deposited primarily by the direct action of glacial ice in a variety of landforms. Also, a general term for a landform composed mainly of till (except for kame moraines, which are composed mainly of stratified outwash) that has been deposited by a glacier. Some types of moraines are disintegration, end, ground, kame, lateral, recessional, and terminal.
- Morphology, soil.** The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.
- Mottling, soil.** Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few*, *common*, and *many*; size—*fine*, *medium*, and *coarse*; and contrast—*faint*, *distinct*, and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).
- Mountain.** A generic term for an elevated area of the land surface, rising more than 1,000 feet (300 meters) above surrounding lowlands, commonly of restricted summit area (relative to a plateau) and generally having steep sides. A mountain can occur as a single, isolated mass or in a group forming a chain or range. Mountains are formed primarily by tectonic activity and/or volcanic action but can also be formed by differential erosion.
- Muck.** Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)
- Mudstone.** A blocky or massive, fine grained sedimentary rock in which the proportions of clay and silt are approximately equal. Also, a general term for such material as clay, silt, claystone, siltstone, shale, and argillite and that should be used only when the amounts of clay and silt are not known or cannot be precisely identified.
- Munsell notation.** A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.
- Natric horizon.** A special kind of argillic horizon that contains enough exchangeable sodium to have an adverse effect on the physical condition of the subsoil.
- Neutral soil.** A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)
- Nodules.** See Redoximorphic features.
- Nose slope** (geomorphology). A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent. Nose slopes consist dominantly of colluvium and slope-wash sediments (for example, slope alluvium).
- Nutrient, plant.** Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.



**Organic matter.** Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low .....	less than 0.5 percent
Low .....	0.5 to 1.0 percent
Moderately low.....	1.0 to 2.0 percent
Moderate.....	2.0 to 4.0 percent
High .....	4.0 to 8.0 percent
Very high.....	more than 8.0 percent

**Outwash.** Stratified and sorted sediments (chiefly sand and gravel) removed or “washed out” from a glacier by meltwater streams and deposited in front of or beyond the end moraine or the margin of a glacier. The coarser material is deposited nearer to the ice.

**Outwash plain.** An extensive lowland area of coarse textured glaciofluvial material. An outwash plain is commonly smooth; where pitted, it generally is low in relief.

**Outwash terrace.** A flat-topped bank of outwash with an abrupt outer face (scarp or riser) extending along a valley downstream from an outwash plain or terminal moraine; a valley train deposit.

**Pan.** A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan*, *fragipan*, *claypan*, *plowpan*, and *traffic pan*.

**Parent material.** The unconsolidated organic and mineral material in which soil forms.

**Peat.** Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

**Ped.** An individual natural soil aggregate, such as a granule, a prism, or a block.

**Pedon.** The smallest volume that can be called “a soil.” A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

**Percolation.** The movement of water through the soil.

**Permafrost.** Ground, soil, or rock that remains at or below 0 degrees C for at least 2 years. It is defined on the basis of temperature and is not necessarily frozen.

**Permeability.** The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as “saturated hydraulic conductivity,” which is defined in the “Soil Survey Manual.” In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as “permeability.” Terms describing permeability, measured in inches per hour, are as follows:

Impermeable.....	less than 0.0015 inch
Very slow .....	0.0015 to 0.06 inch
Slow .....	0.06 to 0.2 inch
Moderately slow.....	0.2 to 0.6 inch
Moderate.....	0.6 inch to 2.0 inches
Moderately rapid.....	2.0 to 6.0 inches
Rapid .....	6.0 to 20 inches
Very rapid.....	more than 20 inches

**pH value.** A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

**Phase, soil.** A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

**Piping** (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

**Plastic limit.** The moisture content at which a soil changes from semisolid to plastic.

**Plasticity index.** The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

- Plateau** (geomorphology). A comparatively flat area of great extent and elevation; specifically, an extensive land region that is considerably elevated (more than 100 meters) above the adjacent lower lying terrain, is commonly limited on at least one side by an abrupt descent, and has a flat or nearly level surface. A comparatively large part of a plateau surface is near summit level.
- Plowpan.** A compacted layer formed in the soil directly below the plowed layer.
- Ponding.** Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.
- Poorly graded.** Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.
- Pore linings.** See Redoximorphic features.
- Potential rooting depth (effective rooting depth).** Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.
- Prescribed burning.** Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.
- Productivity, soil.** The capability of a soil for producing a specified plant or sequence of plants under specific management.
- Profile, soil.** A vertical section of the soil extending through all its horizons and into the parent material.
- Rangeland.** Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.
- Reaction, soil.** A measure of acidity or alkalinity of a soil, expressed as pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid.....	less than 3.5
Extremely acid .....	3.5 to 4.4
Very strongly acid .....	4.5 to 5.0
Strongly acid .....	5.1 to 5.5
Moderately acid .....	5.6 to 6.0
Slightly acid.....	6.1 to 6.5
Neutral .....	6.6 to 7.3
Slightly alkaline.....	7.4 to 7.8
Moderately alkaline.....	7.9 to 8.4
Strongly alkaline .....	8.5 to 9.0
Very strongly alkaline.....	9.1 and higher

- Red beds.** Sedimentary strata that are mainly red and are made up largely of sandstone and shale.
- Redoximorphic concentrations.** See Redoximorphic features.
- Redoximorphic depletions.** See Redoximorphic features.
- Redoximorphic features.** Redoximorphic features are associated with wetness and result from alternating periods of reduction and oxidation of iron and manganese compounds in the soil. Reduction occurs during saturation with water, and oxidation occurs when the soil is not saturated. Characteristic color patterns are created by these processes. The reduced iron and manganese ions may be removed from a soil if vertical or lateral fluxes of water occur, in which case there is no iron or manganese precipitation in that soil. Wherever the iron and manganese are oxidized and precipitated, they form either soft masses or hard concretions or nodules. Movement of iron and manganese as a result of redoximorphic processes in a soil may result in redoximorphic features that are defined as follows:



1. Redoximorphic concentrations.—These are zones of apparent accumulation of iron-manganese oxides, including:
  - A. Nodules and concretions, which are cemented bodies that can be removed from the soil intact. Concretions are distinguished from nodules on the basis of internal organization. A concretion typically has concentric layers that are visible to the naked eye. Nodules do not have visible organized internal structure; *and*
  - B. Masses, which are noncemented concentrations of substances within the soil matrix; *and*
  - C. Pore linings, i.e., zones of accumulation along pores that may be either coatings on pore surfaces or impregnations from the matrix adjacent to the pores.
2. Redoximorphic depletions.—These are zones of low chroma (chromas less than those in the matrix) where either iron-manganese oxides alone or both iron-manganese oxides and clay have been stripped out, including:
  - A. Iron depletions, i.e., zones that contain low amounts of iron and manganese oxides but have a clay content similar to that of the adjacent matrix; *and*
  - B. Clay depletions, i.e., zones that contain low amounts of iron, manganese, and clay (often referred to as silt coatings or skeletans).
3. Reduced matrix.—This is a soil matrix that has low chroma *in situ* but undergoes a change in hue or chroma within 30 minutes after the soil material has been exposed to air.

**Reduced matrix.** See Redoximorphic features.

**Relief.** The relative difference in elevation between the upland summits and the lowlands or valleys of a given region.

**Residuum (residual soil material).** Unconsolidated, weathered or partly weathered mineral material that accumulated as bedrock disintegrated in place.

**Rill.** A very small, steep-sided channel resulting from erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. A rill generally is not an obstacle to wheeled vehicles and is shallow enough to be smoothed over by ordinary tillage.

**Riser.** The vertical or steep side slope (e.g., escarpment) of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural, steplike landforms, such as successive stream terraces.

**Road cut.** A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

**Rock fragments.** Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

**Root zone.** The part of the soil that can be penetrated by plant roots.

**Runoff.** The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

**Saline soil.** A soil containing soluble salts in an amount that impairs growth of plants. A saline soil does not contain excess exchangeable sodium.

**Sand.** As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

**Sandstone.** Sedimentary rock containing dominantly sand-sized particles.

**Sapric soil material (muck).** The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

**Saturated hydraulic conductivity ( $K_{sat}$ ).** See Permeability.

- Saturation.** Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.
- Sedimentary rock.** A consolidated deposit of clastic particles, chemical precipitates, or organic remains accumulated at or near the surface of the earth under normal low temperature and pressure conditions. Sedimentary rocks include consolidated equivalents of alluvium, colluvium, drift, and eolian, lacustrine, and marine deposits. Examples are sandstone, siltstone, mudstone, claystone, shale, conglomerate, limestone, dolomite, and coal.
- Series, soil.** A group of soils that have profiles that are almost alike. All the soils of a given series have horizons that are similar in composition, thickness, and arrangement.
- Shale.** Sedimentary rock that formed by the hardening of a deposit of clay, silty clay, or silty clay loam and that has a tendency to split into thin layers.
- Sheet erosion.** The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.
- Shoulder.** The convex, erosional surface near the top of a hillslope. A shoulder is a transition from summit to backslope.
- Shrink-swell** (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.
- Side slope** (geomorphology). A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel. Side slopes are dominantly colluvium and slope-wash sediments.
- Silica.** A combination of silicon and oxygen. The mineral form is called quartz.
- Silt.** As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.
- Siltstone.** An indurated silt having the texture and composition of shale but lacking its fine lamination or fissility; a massive mudstone in which silt predominates over clay.
- Similar soils.** Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.
- Site index.** A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.
- Slope.** The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.
- Slope alluvium.** Sediment gradually transported down the slopes of mountains or hills primarily by nonchannel alluvial processes (i.e., slope-wash processes) and characterized by particle sorting. Lateral particle sorting is evident on long slopes. In a profile sequence, sediments may be distinguished by differences in size and/or specific gravity of rock fragments and may be separated by stone lines. Burnished peds and sorting of rounded or subrounded pebbles or cobbles distinguish these materials from unsorted colluvial deposits.
- Slow refill** (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.
- Soft bedrock.** Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

**Soil.** A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief and by the passage of time.

**Soil separates.** Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand .....	2.0 to 1.0
Coarse sand .....	1.0 to 0.5
Medium sand .....	0.5 to 0.25
Fine sand .....	0.25 to 0.10
Very fine sand .....	0.10 to 0.05
Silt .....	0.05 to 0.002
Clay.....	less than 0.002

**Solum.** The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

**Stones.** Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

**Stony.** Refers to a soil containing stones in numbers that interfere with or prevent tillage.

**Stream terrace.** One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel, originally formed near the level of the stream; represents the remnants of an abandoned flood plain, stream bed, or valley floor produced during a former state of fluvial erosion or deposition.

**Structure, soil.** The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grain* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

**Stubble mulch.** Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

**Subsoil.** Technically, the B horizon; roughly, the part of the solum below plow depth.

**Substratum.** The part of the soil below the solum.

**Subsurface layer.** Any surface soil horizon (A, E, AB, or EB) below the surface layer.

**Summit.** The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

**Surface layer.** The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

**Surface soil.** The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

**Talf.** A geomorphic component of flat plains (e.g., lake plain, low coastal plain, low gradient till plain) consisting of an essentially flat (0 or 1 percent slopes) and broad area dominated by closed depressions and a nonintegrated or poorly integrated drainage system. Precipitation tends to pond locally, and lateral transport is slow both above and below ground, favoring the accumulation of organic matter and the retention of fine-earth sediments. Better drained soils are commonly adjacent to drainageways.

- Talus.** Rock fragments of any size or shape (commonly coarse and angular) derived from and lying at the base of a cliff or very steep rock slope. The accumulated mass of such loose broken rock formed chiefly by falling, rolling, or sliding.
- Taxadjuncts.** Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.
- Terminal moraine.** An end moraine that marks the farthest advance of a glacier. It typically has the form of a massive arcuate or concentric ridge, or complex of ridges, and is underlain by till and other types of drift.
- Terrace** (conservation). An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.
- Terrace** (geomorphology). A steplike surface, bordering a valley floor or shoreline, that represents the former position of a flood plain, lake, or seashore. The term is usually applied both to the relatively flat summit surface (tread) that was cut or built by stream or wave action and to the steeper descending slope (scarp or riser) that has graded to a lower base level of erosion.
- Texture, soil.** The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay, and clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."
- Thin layer** (in tables). Otherwise suitable soil material that is too thin for the specified use.
- Till.** Dominantly unsorted and nonstratified drift, generally unconsolidated and deposited directly by a glacier without subsequent reworking by meltwater, and consisting of a heterogeneous mixture of clay, silt, sand, gravel, stones, and boulders; rock fragments of various lithologies are embedded within a finer matrix that can range from clay to sandy loam.
- Till plain.** An extensive area of level to gently undulating soils underlain predominantly by till and bounded at the distal end by subordinate recessional or end moraines.
- Tilth, soil.** The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.
- Toeslope.** The gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.
- Topsoil.** The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.
- Trace elements.** Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.
- Tread.** The flat to gently sloping, topmost, laterally extensive slope of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural steplike landforms, such as successive stream terraces.
- Unstable excavation walls** (in tables). The walls of excavations tend to cave in or slough.
- Upland.** An informal, general term for the higher ground of a region, in contrast with a low-lying adjacent area, such as a valley or plain, or for land at a higher elevation

than the flood plain or low stream terrace; land above the footslope zone of the hillslope continuum.

**Valley train.** A long, narrow body of outwash confined within a valley beyond a glacier; it may emerge from the valley and join an outwash plain.

**Varve.** A sedimentary layer or a lamina or sequence of laminae deposited in a body of still water within a year. Specifically, a thin pair of graded glaciolacustrine layers seasonally deposited, usually by meltwater streams, in a glacial lake or other body of still water in front of a glacier.

**Water bars.** Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

**Weathering.** All physical disintegration, chemical decomposition, and biologically induced changes in rocks or other deposits at or near the earth's surface by atmospheric or biologic agents or by circulating surface waters but involving essentially no transport of the altered material.

**Wilting point (or permanent wilting point).** The moisture content of soil, on an oven-dry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

**Windthrow.** The uprooting and tipping over of trees by the wind.



# Tables

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# Soil Survey of Delaware Water Gap National Recreation Area

Table 1.--Soil Legend

Map unit symbol and map unit name	Components in map unit	Pct. of map unit
290836 Hoosic-Otisville complex, 25 to 60 percent slopes, very stony-----	Hoosic, very stony	50
	Otisville, very stony	40
	Hazen, very stony	10
296265 Alden mucky silt loam-----	Alden	100
296269 Alluvial land-----	Fluvents, (alluvial land)	70
	Holly	20
296271 Alvira and Watson very stony loams, 0 to 12 percent slopes-----	Alvira	55
	Watson	35
	Shelmadine	10
296272 Bath channery silt loam, 3 to 8 percent slopes-----	Bath	85
	Lackawanna	5
	Mardin	5
296273 Bath channery silt loam, 8 to 15 percent slopes-----	Bath	85
	Lackawanna	5
	Mardin	5
296274 Bath channery silt loam, 15 to 25 percent slopes-----	Bath	85
	Lackawanna	5
	Mardin	5
296275 Bath very stony silt loam, 0 to 8 percent slopes-----	Bath	90
296276 Bath very stony silt loam, 8 to 25 percent slopes-----	Bath	90
296277 Benson-Rock outcrop complex, 0 to 8 percent slopes-----	Benson	55
	Rock outcrop	15
296278 Benson-Rock outcrop complex, 8 to 25 percent slopes-----	Benson	60
	Rock outcrop	20
296279 Benson-Rock outcrop complex, 25 to 70 percent slopes-----	Benson	60
	Rock outcrop	25
296280 Braceville gravelly loam, 0 to 3 percent slopes-----	Braceville	90
	Rexford, poorly drained	10
296281 Braceville gravelly loam, 3 to 8 percent slopes-----	Braceville	90
	Rexford, poorly drained	5

# Soil Survey of Delaware Water Gap National Recreation Area

Table 1.--Soil Legend--Continued

Map unit symbol and map unit name	Components in map unit	Pct. of map unit
296283 Buchanan extremely stony loam, 0 to 8 percent slopes-----	Buchanan Shelmadine	90 5
296288 Chippewa and Norwich silt loams, 0 to 5 percent slopes-----	Chippewa Norwich	48 48
296289 Chippewa and Norwich extremely stony soils, 0 to 8 percent slopes-----	Chippewa Norwich	47 47
296295 Cut and fill land-----	Udorthents, cut and fill	90
296297 Dekalb extremely stony loam, 8 to 25 percent slopes-----	Dekalb	100
296298 Dekalb extremely stony loam, 25 to 80 percent slopes-----	Dekalb	100
296303 Hazleton extremely stony sandy loam, 8 to 25 percent slopes-----	Hazleton	100
296304 Holly silt loam-----	Holly	100
296311 Lackawanna and Bath extremely stony soils, steep-----	Lackawanna Bath Lordstown Mardin Oquaga Wellsboro	40 30 5 5 5 5
296312 Lackawanna channery loam, 2 to 8 percent slopes-----	Lackawanna Bath Wellsboro	80 5 5
296313 Lackawanna channery loam, 8 to 15 percent slopes-----	Lackawanna Bath Lackawanna	80 5 5
296315 Lackawanna extremely stony loam, 0 to 8 percent slopes-----	Lackawanna Bath Wellsboro	80 5 5
296316 Lackawanna extremely stony loam, 8 to 25 percent slopes-----	Lackawanna Bath Wellsboro	80 5 5
296317 Laidig extremely stony loam, 0 to 8 percent slopes-----	Laidig	100
296326 Lordstown extremely stony silt loam, 0 to 8 percent slopes-----	Lordstown Arnot Bath Oquaga	85 5 5 5

# Soil Survey of Delaware Water Gap National Recreation Area

Table 1.--Soil Legend--Continued

Map unit symbol and map unit name	Components in map unit	Pct. of map unit
296327 Lordstown extremely stony silt loam, 8 to 25 percent slopes-----	Lordstown Arnot Bath Oquaga	85 5 5 5
296328 Lordstown and Oquaga extremely stony soils, 25 to 70 percent slopes-----	Lordstown Oquaga	40 35
296329 Mardin channery silt loam, 2 to 8 percent slopes-----	Mardin Volusia Chippewa Bath	85 5 3 2
296330 Mardin channery silt loam, 8 to 15 percent slopes-----	Mardin Volusia Bath Chippewa	85 5 3 2
296331 Mardin very stony silt loam, 0 to 8 percent slopes-----	Mardin Lordstown Volusia Chippewa	85 6 5 4
296332 Mardin very stony silt loam, 8 to 25 percent slopes-----	Mardin Lordstown Volusia Chippewa	87 8 3 1
296335 Meckesville gravelly loam, 8 to 15 percent slopes-----	Meckesville	100
296337 Meckesville very stony loam, 8 to 25 percent slopes-----	Meckesville	100
296338 Morris channery silt loam, 2 to 10 percent slopes-----	Morris Norwich	80 20
296339 Morris extremely stony silt loam, 0 to 8 percent slopes-----	Morris Norwich	75 25
296340 Morris extremely stony silt loam, 8 to 20 percent slopes-----	Morris Norwich	80 20
296341 Mucky peat, deep-----	Freetown, mucky peat	100
296342 Mucky peat, shallow-----	Paupack, mucky peat (shallow)	100
296343 Oquaga-Lackawanna channery loams, 3 to 8 percent slopes-----	Oquaga Lackawanna	50 35

# Soil Survey of Delaware Water Gap National Recreation Area

Table 1.--Soil Legend--Continued

Map unit symbol and map unit name	Components in map unit	Pct. of map unit
296344 Oquaga-Lackawanna channery loams, 8 to 15 percent slopes-----	Oquaga Lackawanna	55 30
296346 Oquaga-Lackawanna extremely stony loams, 0 to 8 percent slopes-----	Oquaga Lackawanna	50 35
296347 Oquaga-Lackawanna extremely stony loams, 8 to 25 percent slopes-----	Oquaga Lackawanna	60 30
296348 Philo silt loam-----	Philo Holly	85 10
296349 Pope silt loam-----	Pope Holly	90 8
296350 Pope silt loam, high bottom-----	Pope Holly	90 10
296351 Rexford gravelly silt loam, 0 to 3 percent slopes-----	Rexford, somewhat poorly drained Rexford, poorly drained	40 35
296355 Sheffield silt loam-----	Sheffield	100
296363 Very stony land and Rock outcrops, steep-----	Dystrochrepts, very stony	85
296369 Wayland silty clay loam-----	Wayland	100
296376 Wellsboro channery loam, 3 to 8 percent slopes-----	Wellsboro Morris Norwich Lackawanna	80 8 8 4
296379 Wellsboro extremely stony loam, 8 to 25 percent slopes-----	Wellsboro Lackawanna Norwich Morris	85 8 3 2
296385 Wyoming gravelly sandy loam, 0 to 3 percent slopes-----	Wyoming Braceville Unadilla	85 5 5
296386 Wyoming gravelly sandy loam, 3 to 8 percent slopes-----	Wyoming Braceville Unadilla	85 5 5

# Soil Survey of Delaware Water Gap National Recreation Area

Table 1.--Soil Legend--Continued

Map unit symbol and map unit name	Components in map unit	Pct. of map unit
296387 Wyoming gravelly sandy loam, 8 to 15 percent slopes-----	Wyoming Braceville Unadilla	85 7 5
296388 Wyoming gravelly sandy loam, 15 to 25 percent slopes-----	Wyoming Unadilla	85 5
296389 Wyoming gravelly sandy loam, 25 to 70 percent slopes-----	Wyoming	100
296390 Water-----	Water	100
297185 Edgemere-Shohola complex, 3 to 15 percent slopes, very rubbly-----	Edgemere Shohola Mardin Freetown	42 42 11 5
297186 Edgemere extremely stony loam, 0 to 3 percent slopes, very rubbly-----	Edgemere Shohola Mardin Freetown Wyalusing	75 10 7 4 4
297188 Manlius-Arnot-Rock outcrop complex, 15 to 30 percent slopes, rubbly-----	Manlius Arnot Rock outcrop Mardin Rubble land	40 35 15 6 4
297189 Manlius-Arnot-Rock outcrop complex, 30 to 80 percent slopes, rubbly-----	Manlius Arnot Rock outcrop Mardin Rubble land	40 35 15 6 4
297190 Braceville fine sandy loam-----	Braceville Wyoming Chenango Rexford, poorly drained	82 9 6 3
297191 Wyalusing fine sandy loam-----	Wyalusing Barbour Craigsville Pope	85 7 6 2
297192 Pope fine sandy loam-----	Pope Wyalusing	95 5
297193 Paupack mucky peat-----	Paupack Edgemere Kimbles	90 8 2

# Soil Survey of Delaware Water Gap National Recreation Area

Table 1.--Soil Legend--Continued

Map unit symbol and map unit name	Components in map unit	Pct. of map unit
297196 Freetown mucky peat-----	Freetown Gleneyre	94 6
297197 Manlius very channery silt loam, 3 to 8 percent slopes, very bouldery----	Manlius Mardin Edgemere	90 7 3
297198 Manlius very channery silt loam, 8 to 15 percent slopes, very bouldery----	Manlius Mardin Edgemere Rock outcrop	86 10 2 2
297201 Oquaga very stony loam, 15 to 30 percent slopes, extremely bouldery-----	Oquaga Wellsboro Rock outcrop Lackawanna Shohola	75 7 6 5 2
297203 Delaware fine sandy loam, 0 to 3 percent slopes-----	Delaware Pope Chenango Barbour	93 4 2 1
297204 Delaware fine sandy loam, 3 to 8 percent slopes-----	Delaware Chenango Pope Barbour	82 9 6 3
297205 Delaware fine sandy loam, 8 to 20 percent slopes-----	Delaware Pope Barbour Chenango	80 8 7 5
297209 Philo loam-----	Philo Barbour Chenango Wyalusing	85 8 2 2
297210 Barbour fine sandy loam-----	Barbour Pope Philo Delaware	85 7 4 3
297216 Wurtsboro stony fine sandy loam, 0 to 8 percent slopes, extremely stony--	Wurtsboro Edgemere Shohola Oquaga	92 3 3 2
297217 Wurtsboro stony fine sandy loam, 8 to 15 percent slopes, extremely stony--	Wurtsboro Oquaga Rock outcrop Edgemere Shohola	88 6 4 1 1

# Soil Survey of Delaware Water Gap National Recreation Area

Table 1.--Soil Legend--Continued

Map unit symbol and map unit name	Components in map unit	Pct. of map unit
297227 Arnot very channery loam, 3 to 15 percent slopes, very rocky-----	Arnot Rock outcrop Mardin Lackawanna	88 6 4 1
297228 Arnot very channery loam, 15 to 35 percent slopes, very rocky-----	Arnot Rock outcrop Mardin Swartswood	85 8 5 2
297229 Wyoming very cobbly sandy loam, 3 to 8 percent slopes-----	Wyoming Delaware Braceville Suncook	90 6 2 2
297230 Wyoming very cobbly sandy loam, 8 to 15 percent slopes-----	Wyoming Delaware Braceville Suncook	90 6 2 2
297231 Wyoming very cobbly sandy loam, 15 to 30 percent slopes-----	Wyoming Suncook Delaware Braceville	90 6 3 1
297236 Suncook loamy sand, 0 to 8 percent slopes-----	Suncook Wyalusing	91 4
297237 Mardin channery silt loam, 0 to 8 percent slopes, stony-----	Mardin Manlius Oquaga Edgemere Shohola	85 5 5 3 2
297238 Mardin channery silt loam, 8 to 15 percent slopes, stony-----	Mardin Manlius Oquaga Edgemere Shohola	85 5 5 3 2
297239 Mardin stony loam, 0 to 8 percent slopes, extremely stony-----	Mardin Manlius Oquaga Edgemere Shohola	85 5 5 3 2
297240 Mardin stony loam, 8 to 15 percent slopes, extremely stony-----	Mardin Manlius Oquaga Edgemere Shohola	85 5 4 3 2



# Soil Survey of Delaware Water Gap National Recreation Area

Table 1.--Soil Legend--Continued

Map unit symbol and map unit name	Components in map unit	Pct. of map unit
297241 Unadilla silt loam-----	Unadilla	90
	Braceville	6
	Suncook	4
297242 Shohola-Edgemere complex, 0 to 8 percent slopes, very rubbly-----	Shohola	62
	Edgemere	29
	Mardin	9
297243 Shohola-Edgemere complex, 8 to 15 percent slopes, very rubbly-----	Shohola	62
	Edgemere	29
	Mardin	9
297244 Lordstown-Swartswood complex, 0 to 8 percent slopes, extremely stony-----	Lordstown	40
	Swartswood	35
	Arnot	10
	Rock outcrop	10
	Shohola	5
297247 Chenango gravelly fine sandy loam, 0 to 8 percent slopes-----	Chenango	86
	Delaware	7
	Braceville	3
	Philo	2
	Unadilla	2
297248 Chenango gravelly fine sandy loam, 8 to 15 percent slopes-----	Chenango	85
	Delaware	9
	Unadilla	6
297249 Chenango gravelly fine sandy loam, 15 to 25 percent slopes-----	Chenango	90
	Delaware	8
	Unadilla	2
297253 Craigsville-Wyoming complex, 0 to 8 percent slopes, extremely stony-----	Craigsville	50
	Wyoming	40
	Wyalusing	6
	Philo	2
	Pope	2
297254 Pits, shale, and gravel-----	Pits, gravel	40
	Pits, shale	40
298049 Wurtsboro loam, 0 to 8 percent slopes, extremely stony-----	Wurtsboro, extremely stony	90
	Swartswood, extremely stony	10
298050 Wurtsboro-Swartswood complex, 0 to 8 percent slopes, extremely stony-----	Wurtsboro, extremely stony	60
	Swartswood, extremely stony	40

# Soil Survey of Delaware Water Gap National Recreation Area

Table 1.--Soil Legend--Continued

Map unit symbol and map unit name	Components in map unit	Pct. of map unit
298051 Wurtsboro-Swartswood complex, 8 to 15 percent slopes, extremely stony----	Wurtsboro, extremely stony	60
	Swartswood, extremely stony	40
298075 Colonie loamy fine sand, 3 to 8 percent slopes-----	Colonie	80
	Delaware	10
	Unadilla	10
298188 Lackawanna cobbly fine sandy loam, 15 to 35 percent slopes, extremely stony-----	Lackawanna, extremely stony	85
	Wellsboro, extremely stony	10
	Oquaga, extremely stony	5
298189 Lackawanna cobbly fine sandy loam, 8 to 15 percent slopes, extremely stony-----	Lackawanna, extremely stony	85
	Wellsboro, extremely stony	10
	Oquaga, extremely stony	5
298221 Swartswood loam, 0 to 8 percent slopes, extremely stony-----	Swartswood, extremely stony	90
	Wurtsboro, extremely stony	10
298222 Swartswood loam, 8 to 15 percent slopes, extremely stony-----	Swartswood, extremely stony	90
	Wurtsboro, extremely stony	10
298223 Swartswood loam, 15 to 35 percent slopes, extremely stony-----	Swartswood, extremely stony	85
	Arnot, extremely stony	10
	Lordstown, extremely stony	5
298255 Delaware fine sandy loam, 3 to 8 percent slopes, rarely flooded-----	Delaware, rarely flooded	80
	Colonie	10
	Unadilla	10
298256 Delaware fine sandy loam, 0 to 3 percent slopes, rarely flooded-----	Delaware, rarely flooded	80
	Colonie	10
	Unadilla	10

# Soil Survey of Delaware Water Gap National Recreation Area

Table 1.--Soil Legend--Continued

Map unit symbol and map unit name	Components in map unit	Pct. of map unit
298257 Wallpack silt loam, 8 to 15 percent slopes-----	Wallpack Cambridge Lordstown	85 10 5
298258 Wallpack silt loam, 15 to 25 percent slopes-----	Wallpack Cambridge Lordstown	85 10 5
298259 Wallpack silt loam, 3 to 8 percent slopes, extremely stony-----	Wallpack, extremely stony Cambridge, extremely stony Lordstown, extremely stony	85 10 5
298260 Wallpack silt loam, 8 to 15 percent slopes, extremely stony-----	Wallpack, extremely stony Cambridge, extremely stony Lordstown, extremely stony	85 10 5
298261 Wallpack silt loam, 3 to 8 percent slopes-----	Wallpack Cambridge Lordstown	85 10 5
298262 Wallpack silt loam, 15 to 35 percent slopes, extremely stony-----	Wallpack, extremely stony Cambridge, extremely stony Lordstown, extremely stony	85 10 5
298265 Venango silt loam, 0 to 8 percent slopes, extremely stony-----	Venango, extremely stony Chippewa, extremely stony	90 10
298266 Venango silt loam, 8 to 15 percent slopes, extremely stony-----	Venango, extremely stony Nassau, extremely stony Manlius, extremely stony	85 10 5
298409 Swartswood loam, 0 to 8 percent slopes, extremely stony-----	Swartswood, extremely stony Wurtsboro, extremely stony	90 10
298411 Swartswood loam, 8 to 15 percent slopes, extremely stony-----	Swartswood, extremely stony Wurtsboro, extremely stony	90 10

# Soil Survey of Delaware Water Gap National Recreation Area

Table 1.--Soil Legend--Continued

Map unit symbol and map unit name	Components in map unit	Pct. of map unit
298413 Swartswood loam, 15 to 35 percent slopes, extremely stony-----	Swartswood, extremely stony	85
	Arnot, extremely stony	10
	Lordstown, extremely stony	5
318498 Hazen-Hoosic complex, 3 to 8 percent slopes, very stony-----	Hazen, very stony	60
	Hoosic, very stony	35
	Otisville, very stony	5
318533 Hazen-Hoosic complex, 0 to 3 percent slopes, very stony-----	Hazen, very stony	50
	Hoosic, very stony	40
	Hero, very stony	10
319783 Catden mucky peat, 0 to 2 percent slopes-----	Catden	85
	Alden	13
	Wallkill	2
319784 Fredon-Halsey complex, 0 to 3 percent slopes, very stony-----	Fredon, very stony	50
	Halsey, very stony	40
	Hero, very stony	10
543222 Andover-Buchanan gravelly loams, 0 to 8 percent slopes, extremely stony--	Andover, extremely stony	55
	Buchanan, extremely stony	40
	Laidig	3
	Hazleton	2
543243 Berks-Weikert complex, 25 to 60 percent slopes-----	Berks	65
	Weikert	25
	Bedington	4
	Comly	3
	Brinkerton	2
543246 Buchanan gravelly loam, 3 to 8 percent slopes-----	Buchanan	75
	Andover	10
	Wharton	10
	Laidig	5
543247 Buchanan gravelly loam, 0 to 8 percent slopes, extremely stony-----	Buchanan, extremely stony	80
	Andover, extremely stony	5
	Cookport	5
	Laidig	5
	Murrill	5

# Soil Survey of Delaware Water Gap National Recreation Area

Table 1.--Soil Legend--Continued

Map unit symbol and map unit name	Components in map unit	Pct. of map unit
543257 Chippewa silt loam, 0 to 3 percent slopes-----	Chippewa Swartswood Wurtsboro	90 5 5
543258 Chippewa silt loam, 3 to 8 percent slopes-----	Chippewa Swartswood Wurtsboro	90 5 5
543259 Chippewa gravelly silt loam, 0 to 8 percent slopes, extremely stony-----	Chippewa, extremely stony Swartswood Wurtsboro	90  5 5
543271 Delaware fine sandy loam, 0 to 3 percent slopes-----	Delaware Alton Conotton Hatboro Nanticoke	90 5 2 1 1
543276 Fluvaquents-----	Fluvaquents Towhee Mount Lucas Nanticoke Neshaminy	85 5 1 1 1
543292 Hazleton very channery loam, 8 to 25 percent slopes, extremely stony-----	Hazleton, extremely stony Buchanan	90  5
543293 Hazleton very channery loam, 25 to 60 percent slopes, extremely stony----	Hazleton, extremely stony Buchanan	90  5
543299 Laidig very gravelly loam, 0 to 8 percent slopes, extremely stony-----	Laidig, extremely stony Andover Buchanan Hazleton	90  4 4 2
543300 Laidig very gravelly loam, 8 to 25 percent slopes, extremely stony-----	Laidig, extremely stony Andover, extremely stony Buchanan Hazleton	90  4 4 2
543304 Laidig-Rubble land complex, 25 to 60 percent slopes-----	Laidig Rubble land Andover Buchanan	50 40 5 5

# Soil Survey of Delaware Water Gap National Recreation Area

Table 1.--Soil Legend--Continued

Map unit symbol and map unit name	Components in map unit	Pct. of map unit
543318 Rubble land-----	Rubble land   Hazleton   Buchanan   Clymer   Laidig	75   10   5   5   5
543327 Swartswood gravelly loam, 3 to 8 percent slopes-----	Swartswood   Conotton   Chippewa   Manlius	90   4   3   3
543328 Swartswood gravelly loam, 8 to 15 percent slopes-----	Swartswood   Conotton   Chippewa   Manlius	90   4   3   3
543330 Swartswood and Wurtsboro soils, 0 to 8 percent slopes, extremely stony---	Swartswood,   extremely stony   Wurtsboro,   extremely stony   Conotton   Manlius   Chippewa,   extremely stony	50   30   4 4 3 
543331 Swartswood and Wurtsboro soils, 8 to 25 percent slopes, extremely stony--	Swartswood,   extremely stony   Wurtsboro,   extremely stony   Conotton   Chippewa,   extremely stony	50   30   4 3 
543359 Volusia gravelly silt loam, 3 to 8 percent slopes-----	Volusia   Chippewa   Swartswood	85   10 5
543360 Volusia gravelly silt loam, 0 to 8 percent slopes, extremely stony-----	Volusia,   extremely stony   Chippewa,   extremely stony   Swartswood	85   10   5
543374 Wurtsboro gravelly silt loam, 3 to 8 percent slopes-----	Wurtsboro   Chippewa   Conotton   Halsey   Manlius   Phelps	90   2 2 2 2 2

# Soil Survey of Delaware Water Gap National Recreation Area

Table 1.--Soil Legend--Continued

Map unit symbol and map unit name	Components in map unit	Pct. of map unit
543375 Wurtsboro gravelly silt loam, 8 to 15 percent slopes-----	Wurtsboro Chippewa Conotton Halsey Manlius Phelps	90 2 2 2 2 2
612280 Scio silt loam, 0 to 3 percent slopes-----	Scio Unadilla Aeric Endoaquepts, postglacial alluvium	80 10 10
612666 Colonie loamy fine sand, 0 to 3 percent slopes-----	Colonie Delaware Unadilla	80 10 10
612668 Hoosic-Hazen complex, 8 to 15 percent slopes, very stony-----	Hoosic, very stony Hazen, very stony Otisville, very stony Colonie, very stony	60 30 5 5
612724 Lordstown-Wallpack complex, 15 to 35 percent slopes, very rocky-----	Lordstown, very rocky Wallpack, very rocky Chadakoin, very rocky Rock outcrop	50 40 5 5
612732 Atherton mucky silt loam, 0 to 3 percent slopes-----	Atherton, very poorly drained Atherton, poorly drained Aeric Endoaquepts, postglacial alluvium	60 30 10
612738 Fluvaquents, loamy, 0 to 3 percent slopes, occasionally flooded-----	Fluvaquents, occasionally flooded Udifuents, occasionally flooded	90 10



# Soil Survey of Delaware Water Gap National Recreation Area

Table 1.--Soil Legend--Continued

Map unit symbol and map unit name	Components in map unit	Pct. of map unit
612753 Wallpack fine sandy loam, aeolian mantle, 8 to 15 percent slopes, very stony-----	Wallpack, aeolian mantle, very stony Lordstown, very stony Aquic Dystrudepts, aeolian mantle, very stony	85 10 5
612756 Wallpack fine sandy loam, aeolian mantle, 0 to 8 percent slopes, very stony-----	Wallpack, aeolian mantle, very stony Lordstown, very stony Aquic Dystrudepts, aeolian mantle, very stony	85 10 5
612757 Wallpack fine sandy loam, aeolian mantle, 15 to 35 percent slopes, very stony-----	Wallpack, aeolian mantle, very stony Lordstown, very stony Aquic Dystrudepts, aeolian mantle, very stony	85 10 5
612767 Wellsboro silt loam, 8 to 15 percent slopes, extremely stony-----	Wellsboro, extremely stony Morris, extremely stony Lackawanna, extremely stony	85 10 5
612768 Wellsboro silt loam, 0 to 8 percent slopes, extremely stony-----	Wellsboro, extremely stony Morris, extremely stony Lackawanna, extremely stony	85 10 5
613393 Alden silt loam, 0 to 8 percent slopes, extremely stony-----	Alden, extremely stony Chippewa, extremely stony	90 10
613447 Unadilla silt loam, 0 to 3 percent slopes-----	Unadilla Delaware Colonie	85 10 5

# Soil Survey of Delaware Water Gap National Recreation Area

Table 1.--Soil Legend--Continued

Map unit symbol and map unit name	Components in map unit	Pct. of map unit
613448 Unadilla silt loam, 3 to 8 percent slopes-----	Unadilla Delaware Colonie	85 10 5
614075 Wurtsboro-Swartswood complex, 15 to 35 percent slopes, extremely stony---	Wurtsboro, extremely stony Swartswood, extremely stony	80 20
620179 Arnot-Lordstown complex, 0 to 15 percent slopes, very rocky-----	Arnot, very rocky Lordstown, very rocky Rock outcrop	55 40 5
620180 Arnot-Lordstown-Rock outcrop complex, 15 to 35 percent slopes-----	Arnot Lordstown Rock outcrop	45 40 15
620181 Arnot-Lordstown-Rock outcrop complex, 35 to 60 percent slopes-----	Arnot Lordstown Rock outcrop	60 25 15
623089 Chippewa silt loam, 0 to 8 percent slopes, extremely stony-----	Chippewa, extremely stony Alden, extremely stony Venango, extremely stony	80 10 10
623109 Farmington-Rock outcrop complex, 0 to 15 percent slopes-----	Farmington Rock outcrop Galway	50 40 10
624811 Galway loam, 35 to 60 percent slopes, very rocky-----	Galway, very rocky Farmington, very rocky Rock outcrop Wallpack, aeolian mantle, very rocky	80 10 5 5
624813 Lackawanna cobbly fine sandy loam, 0 to 8 percent slopes, extremely stony	Lackawanna, extremely stony Wellsboro, extremely stony Oquaga, extremely stony	85 10 5

# Soil Survey of Delaware Water Gap National Recreation Area

Table 1.--Soil Legend--Continued

Map unit symbol and map unit name	Components in map unit	Pct. of map unit
624816 Lordstown-Wallpack complex, 8 to 15 percent slopes, very rocky-----	Lordstown, very rocky	50
	Wallpack, very rocky	35
	Cambridge, very rocky	5
	Chadakoin, very rocky	5
	Rock outcrop	5
624822 Lordstown-Wallpack complex, 15 to 25 percent slopes-----	Lordstown	50
	Wallpack	35
	Chadakoin	10
	Cambridge	5
624823 Lordstown-Wallpack complex, 8 to 15 percent slopes-----	Lordstown	50
	Wallpack	35
	Chadakoin	10
	Cambridge	5
624824 Lordstown-Wallpack complex, 0 to 8 percent slopes-----	Lordstown	50
	Wallpack	35
	Chadakoin	10
	Cambridge	5
624826 Manlius-Nassau complex, 35 to 60 percent slopes, very rocky-----	Manlius, very rocky	60
	Nassau, very rocky	25
	Rock outcrop	10
	Wallpack, very rocky	5
624827 Nassau-Manlius complex, 0 to 8 percent slopes, very rocky-----	Nassau, very rocky	55
	Manlius, very rocky	44
	Rock outcrop	1
624828 Nassau-Manlius complex, 8 to 15 percent slopes, very rocky-----	Nassau, very rocky	55
	Manlius, very rocky	44
	Rock outcrop	1
624829 Nassau-Manlius complex, 15 to 35 percent slopes, very rocky-----	Nassau, very rocky	55
	Manlius, very rocky	44
	Rock outcrop	1
624832 Nassau-Rock outcrop complex, 35 to 60 percent slopes-----	Nassau	50
	Rock outcrop	45
	Manlius	5

# Soil Survey of Delaware Water Gap National Recreation Area

Table 1.--Soil Legend--Continued

Map unit symbol and map unit name	Components in map unit	Pct. of map unit
624841 Oquaga-Rock outcrop complex, 35 to 60 percent slopes-----	Oquaga Rock outcrop Arnot Lackawanna	60 25 10 5
624845 Rock outcrop-Farmington-Galway complex, 15 to 35 percent slopes-----	Rock outcrop Farmington Galway	45 35 20
624846 Rock outcrop-Arnot-Rubble land complex, 60 to 80 percent slopes-----	Rock outcrop Arnot Rubble land Lordstown	40 30 20 10
626816 Udifluvents, 0 to 3 percent slopes, occasionally flooded-----	Udifluvents, occasionally flooded Fluvaquents, occasionally flooded	90 10
635458 Oquaga-Lackawanna complex, 8 to 15 percent slopes, very rocky-----	Oquaga, very rocky Lackawanna, very rocky Rock outcrop Wellsboro, very rocky	55 30 10 5
635459 Oquaga-Lackawanna complex, 15 to 35 percent slopes, very rocky-----	Oquaga, very rocky Lackawanna, very rocky Rock outcrop Wellsboro, very rocky	50 35 10 5
740953 Delaware fine sandy loam, 0 to 3 percent slopes, rarely flooded-----	Delaware, rarely flooded Colonie Unadilla	80 10 10
740968 Nassau-Manlius complex, 8 to 15 percent slopes, very rocky-----	Nassau, very rocky Manlius, very rocky Rock outcrop	55 44 1
740969 Nassau-Manlius complex, 15 to 35 percent slopes, very rocky-----	Nassau, very rocky Manlius, very rocky Rock outcrop	55 44 1

# Soil Survey of Delaware Water Gap National Recreation Area

Table 1.--Soil Legend--Continued

Map unit symbol and map unit name	Components in map unit	Pct. of map unit
740971 Oquaga-Lackawanna complex, 8 to 15 percent slopes, very rocky-----	Oquaga, very rocky Lackawanna, very rocky Rock outcrop Wellsboro, very rocky	55 30 10 5
740972 Oquaga-Lackawanna complex, 15 to 35 percent slopes, very rocky-----	Oquaga, very rocky Lackawanna, very rocky Rock outcrop Wellsboro, very rocky	50 35 10 5
740974 Oquaga-Rock outcrop complex, 35 to 60 percent slopes-----	Oquaga Rock outcrop Arnot Lackawanna	60 25 10 5
740975 Rock outcrop-Arnot-Rubble land complex, 60 to 80 percent slopes-----	Rock outcrop Arnot Rubble land Lordstown	40 30 20 10
740987 Scio silt loam, 0 to 3 percent slopes-----	Scio Unadilla Aeric Endoaquepts, postglacial alluvium	80 10 10
740988 Udifluvents, 0 to 3 percent slopes, occasionally flooded-----	Udifluvents, occasionally flooded Fluvaquents, occasionally flooded	90 10
740991 Unadilla silt loam, 0 to 3 percent slopes-----	Unadilla Delaware Colonie	85 10 5
740992 Unadilla silt loam, 3 to 8 percent slopes-----	Unadilla Delaware Colonie	85 10 5
740995 Wellsboro silt loam, 0 to 8 percent slopes, extremely stony-----	Wellsboro, extremely stony Morris, extremely stony Lackawanna, extremely stony	85 10 5

# Soil Survey of Delaware Water Gap National Recreation Area

Table 1.--Soil Legend--Continued

Map unit symbol and map unit name	Components in map unit	Pct. of map unit
740996 Wellsboro silt loam, 8 to 15 percent slopes, extremely stony-----	Wellsboro, extremely stony	85
	Morris, extremely stony	10
	Lackawanna, extremely stony	5
741149 Lackawanna cobbly fine sandy loam, 8 to 15 percent slopes, extremely stony-----	Lackawanna, extremely stony	85
	Wellsboro, extremely stony	10
	Oquaga, extremely stony	5
741150 Lackawanna cobbly fine sandy loam, 15 to 35 percent slopes, extremely stony-----	Lackawanna, extremely stony	85
	Wellsboro, extremely stony	10
	Oquaga, extremely stony	5
801114 Oquaga-Rock outcrop complex, 0 to 15 percent slopes-----	Oquaga	75
	Rock outcrop	15
	Arnot	5
	Wellsboro	5
810906 Oquaga-Rock outcrop complex, 0 to 15 percent slopes-----	Oquaga	75
	Rock outcrop	15
	Arnot	5
	Wellsboro	5
1147465 Alden silt loam, 0 to 8 percent slopes, extremely stony-----	Alden, extremely stony	90
	Chippewa, extremely stony	10
1147467 Arnot-Lordstown complex, 0 to 15 percent slopes, very rocky-----	Arnot, very rocky	55
	Lordstown, very rocky	40
	Rock outcrop	5
1147468 Arnot-Lordstown-Rock outcrop complex, 15 to 35 percent slopes-----	Arnot	45
	Lordstown	40
	Rock outcrop	15
1147469 Arnot-Lordstown-Rock outcrop complex, 35 to 60 percent slopes-----	Arnot	60
	Lordstown	25
	Rock outcrop	15

# Soil Survey of Delaware Water Gap National Recreation Area

Table 1.--Soil Legend--Continued

Map unit symbol and map unit name	Components in map unit	Pct. of map unit
1147470 Atherton mucky silt loam, 0 to 3 percent slopes-----	Atherton, very poorly drained	60
	Atherton, poorly drained	30
	Aeric Endoaquepts, postglacial alluvium	10
1147471 Catden mucky peat, 0 to 2 percent slopes-----	Catden	85
	Alden	13
	Wallkill	2
1147474 Chippewa silt loam, 0 to 8 percent slopes, extremely stony-----	Chippewa, extremely stony	80
	Alden, extremely stony	10
	Venango, extremely stony	10
1147475 Colonie loamy fine sand, 0 to 3 percent slopes-----	Colonie	80
	Delaware	10
	Unadilla	10
1147478 Delaware fine sandy loam, 3 to 8 percent slopes, rarely flooded-----	Delaware, rarely flooded	80
	Colonie	10
	Unadilla	10
1147482 Fredon-Halsey complex, 0 to 3 percent slopes, very stony-----	Fredon, very stony	50
	Halsey, very stony	40
	Hero, very stony	10
1147485 Hazen-Hoosic complex, 3 to 8 percent slopes, very stony-----	Hazen, very stony	60
	Hoosic, very stony	35
	Otisville, very stony	5
1147490 Hoosic-Hazen complex, 8 to 15 percent slopes, very stony-----	Hoosic, very stony	60
	Hazen, very stony	30
	Otisville, very stony	5
	Colonie, very stony	5



# Soil Survey of Delaware Water Gap National Recreation Area

Table 1.--Soil Legend--Continued

Map unit symbol and map unit name	Components in map unit	Pct. of map unit
1147491 Hoosic-Otisville complex, 25 to 60 percent slopes, very stony-----	Hoosic, very stony	50
	Otisville, very stony	40
	Hazen, very stony	10
1147492 Lackawanna cobbly fine sandy loam, 0 to 8 percent slopes, extremely stony	Lackawanna, extremely stony	85
	Wellsboro, extremely stony	10
	Oquaga, extremely stony	5
1147500 Wurtsboro loam, 0 to 8 percent slopes, extremely stony-----	Wurtsboro, extremely stony	90
	Swartswood, extremely stony	10
1147501 Wurtsboro-Swartswood complex, 0 to 8 percent slopes, extremely stony----	Wurtsboro, extremely stony	60
	Swartswood, extremely stony	40
1147502 Wurtsboro-Swartswood complex, 8 to 15 percent slopes, extremely stony----	Wurtsboro, extremely stony	60
	Swartswood, extremely stony	40
1147527 Udorthents-Urban land complex, 0 to 8 percent slopes-----	Udorthents	60
	Urban land	40
1147532 Udorthents, 0 to 8 percent slopes, smoothed-----	Udorthents	100
1147533 Wurtsboro-Swartswood complex, 15 to 35 percent slopes, extremely stony---	Wurtsboro, extremely stony	80
	Swartswood, extremely stony	20
1948749 Arnot channery silt loam, 3 to 8 percent slopes-----	Arnot	90
	Bedington	5
	Wurtsboro	5
1948750 Arnot channery silt loam, 8 to 15 percent slopes-----	Arnot	90
	Brinkerton	5
	Wurtsboro	5
1948751 Arnot channery silt loam, 15 to 25 percent slopes-----	Arnot	90
	Brinkerton	5
	Wurtsboro	5

# Soil Survey of Delaware Water Gap National Recreation Area

Table 1.--Soil Legend--Continued

Map unit symbol and map unit name	Components in map unit	Pct. of map unit
1948774 Conotton gravelly loam, 3 to 8 percent slopes-----	Conotton	90
1948775 Conotton gravelly loam, 8 to 15 percent slopes-----	Conotton	95
1948776 Conotton gravelly loam, 15 to 25 percent slopes-----	Conotton	95
1948777 Conotton gravelly loam, 25 to 65 percent slopes-----	Conotton	95
1948797 Manlius channery silt loam, 3 to 8 percent slopes-----	Manlius Arnot Conotton Loudonville Swartswood Wurtsboro	90 2 2 2 2 2
1948802 Manlius channery silt loam, 8 to 15 percent slopes-----	Manlius Arnot Conotton Loudonville Swartswood Wurtsboro	90 2 2 2 2 2
1948818 Manlius channery silt loam, 15 to 25 percent slopes-----	Manlius Arnot Conotton Loudonville Swartswood Wurtsboro	90 2 2 2 2 2
1948832 Penargyl channery silt loam, 3 to 8 percent slopes-----	Penargyl	90
1948846 Phelps gravelly silt loam, 3 to 8 percent slopes-----	Phelps Halsey Swartswood Wurtsboro	90 4 4 2
1948855 Udorthents, loamy-----	Udorthents, loamy Bedington Clarksburg Duffield Lansdale Readington	95 1 1 1 1 1
1948989 Urban land-Delaware complex, 0 to 8 percent slopes-----	Urban land Delaware	65 25

# Soil Survey of Delaware Water Gap National Recreation Area

Table 2.--Land Capability Classification

[Land capability classification is a system of grouping soils primarily on the basis of their capability to produce common cultivated crops and pasture plants without deteriorating over a long period of time]

Map unit symbol and component name	Land capability
290836	
Hoosic, very stony-----	7e
Otisville, very stony-----	7s
296265	
Alden-----	4w
296269	
Fluvents, (alluvial land)-----	8s
296271	
Alvira-----	6s
Watson-----	6s
296272	
Bath-----	2e
296273	
Bath-----	3e
296274	
Bath-----	4e
296275	
Bath-----	6s
296276	
Bath-----	6s
296277	
Benson-----	6s
296278	
Benson-----	6s
296279	
Benson-----	7s
296280	
Braceville-----	2w
296281	
Braceville-----	2w
296283	
Buchanan-----	7s
296288	
Chippewa-----	4w
Norwich-----	4w
296289	
Chippewa-----	7s
Norwich-----	7s

# Soil Survey of Delaware Water Gap National Recreation Area

Table 2.--Land Capability Classification--Continued

Map unit symbol and component name	Land capability
296295 Udorthents, cut and fill.	
296297 Dekalb-----	7s
296298 Dekalb-----	7s
296303 Hazleton-----	7s
296304 Holly-----	3w
296311 Lackawanna-----	7s
Bath-----	7s
296312 Lackawanna-----	2e
296313 Lackawanna-----	3e
296315 Lackawanna-----	7s
296316 Lackawanna-----	7s
296317 Laidig-----	7s
296326 Lordstown-----	7s
296327 Lordstown-----	7s
296328 Lordstown-----	7s
Oquaga-----	7s
296329 Mardin-----	2w
296330 Mardin-----	3e
296331 Mardin-----	6s
296332 Mardin-----	6s
296335 Meckesville-----	3e
296337 Meckesville-----	6s

# Soil Survey of Delaware Water Gap National Recreation Area

Table 2.--Land Capability Classification--Continued

Map unit symbol and component name	Land capability
296338	
Morris-----	3w
296339	
Morris-----	7s
296340	
Morris-----	7s
296341	
Freetown, mucky peat-----	5w
296342	
Paupack, mucky peat (shallow)-----	5w
296343	
Oquaga-----	2e
Lackawanna-----	2e
296344	
Oquaga-----	3e
Lackawanna-----	3e
296346	
Oquaga-----	7s
Lackawanna-----	7s
296347	
Oquaga-----	7s
Lackawanna-----	7s
296348	
Philo-----	2w
296349	
Pope-----	1
296350	
Pope-----	1
296351	
Rexford, somewhat poorly drained-----	3w
Rexford, poorly drained-----	3w
296355	
Sheffield-----	3w
296363	
Dystrochrepts, very stony-----	7s
296369	
Wayland-----	4w
296376	
Wellsboro-----	2w
296379	
Wellsboro-----	7s

# Soil Survey of Delaware Water Gap National Recreation Area

Table 2.--Land Capability Classification--Continued

Map unit symbol and component name	Land capability
296385	
Wyoming-----	3s
296386	
Wyoming-----	3s
296387	
Wyoming-----	4s
296388	
Wyoming-----	4e
296389	
Wyoming-----	7e
297185	
Edgemere-----	7s
Shohola-----	7s
297186	
Edgemere-----	7s
297188	
Manlius-----	7s
Arnot-----	7s
297189	
Manlius-----	7s
Arnot-----	7s
297190	
Braceville-----	2w
297191	
Wyalusing-----	4w
297192	
Pope-----	2w
297193	
Paupack-----	5w
297196	
Freetown-----	5w
297197	
Manlius-----	6s
297198	
Manlius-----	6s
297201	
Oquaga-----	6s
297203	
Delaware-----	1
297204	
Delaware-----	2e

# Soil Survey of Delaware Water Gap National Recreation Area

Table 2.--Land Capability Classification--Continued

Map unit symbol and component name	Land capability
297205 Delaware-----	4e
297209 Philo-----	2w
297210 Barbour-----	1
297216 Wurtsboro-----	6s
297217 Wurtsboro-----	6s
297227 Arnot-----	6s
297228 Arnot-----	7s
297229 Wyoming-----	3s
297230 Wyoming-----	4s
297231 Wyoming-----	4e
297236 Suncook-----	3s
297237 Mardin-----	2w
297238 Mardin-----	3e
297239 Mardin-----	6s
297240 Mardin-----	6s
297241 Unadilla-----	1
297242 Shohola-----	7s
Edgemere-----	7s
297243 Shohola-----	7s
Edgemere-----	7s
297244 Lordstown-----	7s
Swartswood-----	7s



# Soil Survey of Delaware Water Gap National Recreation Area

Table 2.--Land Capability Classification--Continued

Map unit symbol and component name	Land capability
297247 Chenango-----	2s
297248 Chenango-----	3e
297249 Chenango-----	4e
297253 Craigsville-----	6s
Wyoming-----	6s
298049 Wurtsboro, extremely stony-----	7s
298050 Wurtsboro, extremely stony-----	7s
Swartswood, extremely stony-----	7s
298051 Wurtsboro, extremely stony-----	7s
Swartswood, extremely stony-----	7s
298075 Colonie-----	2s
298188 Lackawanna, extremely stony-----	7s
298189 Lackawanna, extremely stony-----	7s
298221 Swartswood, extremely stony-----	7s
298222 Swartswood, extremely stony-----	7s
298223 Swartswood, extremely stony-----	7s
298255 Delaware, rarely flooded-----	2e
298256 Delaware, rarely flooded-----	1
298257 Wallpack-----	3e
298258 Wallpack-----	4e
298259 Wallpack, extremely stony-----	7s
298260 Wallpack, extremely stony-----	7s

# Soil Survey of Delaware Water Gap National Recreation Area

Table 2.--Land Capability Classification--Continued

Map unit symbol and component name	Land capability
298261 Wallpack-----	2e
298262 Wallpack, extremely stony-----	7s
298265 Venango, extremely stony-----	6s
298266 Venango, extremely stony-----	6s
298409 Swartswood, extremely stony-----	7s
298411 Swartswood, extremely stony-----	7s
298413 Swartswood, extremely stony-----	7s
318498 Hazen, very stony-----	2e
Hoosic, very stony-----	3s
318533 Hazen, very stony-----	1
Hoosic, very stony-----	3s
319783 Catden-----	5w
319784 Fredon, very stony-----	3w
Halsey, very stony-----	5w
543222 Andover, extremely stony-----	7s
Buchanan, extremely stony-----	7s
543243 Berks-----	7e
Weikert-----	7e
543246 Buchanan-----	2e
543247 Buchanan, extremely stony-----	7s
543257 Chippewa-----	4w
543258 Chippewa-----	4w
543259 Chippewa, extremely stony-----	7s

# Soil Survey of Delaware Water Gap National Recreation Area

Table 2.--Land Capability Classification--Continued

Map unit symbol and component name	Land capability
543271 Delaware-----	1
543276 Fluvaquents-----	5w
543292 Hazleton, extremely stony-----	7s
543293 Hazleton, extremely stony-----	7s
543299 Laidig, extremely stony-----	7s
543300 Laidig, extremely stony-----	7s
543304 Laidig-----	7s
543327 Swartswood-----	2e
543328 Swartswood-----	3e
543330 Swartswood, extremely stony-----	7s
Wurtsboro, extremely stony-----	7s
543331 Swartswood, extremely stony-----	7s
Wurtsboro, extremely stony-----	7s
543359 Volusia-----	3w
543360 Volusia, extremely stony-----	7s
543374 Wurtsboro-----	2w
543375 Wurtsboro-----	3e
612280 Scio-----	2w
612666 Colonie-----	2s
612668 Hoosic, very stony-----	3e
Hazen, very stony-----	3e
612724 Lordstown, very rocky-----	7s
Wallpack, very rocky-----	7s

# Soil Survey of Delaware Water Gap National Recreation Area

Table 2.--Land Capability Classification--Continued

Map unit symbol and component name	Land capability
612732	
Atherton, very poorly drained-----	3w
Atherton, poorly drained-----	3w
612738	
Fluvaquents, occasionally flooded-----	3w
612753	
Wallpack, aeolian mantle, very stony-----	3e
612756	
Wallpack, aeolian mantle, very stony-----	2e
612757	
Wallpack, aeolian mantle, very stony-----	6e
612767	
Wellsboro, extremely stony-----	7s
612768	
Wellsboro, extremely stony-----	7s
613393	
Alden, extremely stony-----	7s
613447	
Unadilla-----	1
613448	
Unadilla-----	2e
614075	
Wurtsboro, extremely stony-----	7s
Swartswood, extremely stony-----	7s
620179	
Arnot, very rocky-----	7s
Lordstown, very rocky-----	7s
620180	
Arnot-----	7s
Lordstown-----	7s
620181	
Arnot-----	7s
Lordstown-----	7s
623089	
Chippewa, extremely stony-----	7s
623109	
Farmington-----	7s
624811	
Galway, very rocky-----	7s
624813	
Lackawanna, extremely stony-----	7s

# Soil Survey of Delaware Water Gap National Recreation Area

Table 2.--Land Capability Classification--Continued

Map unit symbol and component name	Land capability
624816	
Lordstown, very rocky-----	6s
Wallpack, very rocky-----	6s
624822	
Lordstown-----	4e
Wallpack-----	4e
624823	
Lordstown-----	3e
Wallpack-----	3e
624824	
Lordstown-----	2e
Wallpack-----	2e
624826	
Manlius, very rocky-----	7s
Nassau, very rocky-----	7s
624827	
Nassau, very rocky-----	7s
Manlius, very rocky-----	6s
624828	
Nassau, very rocky-----	7s
Manlius, very rocky-----	6s
624829	
Nassau, very rocky-----	7s
Manlius, very rocky-----	7s
624832	
Nassau-----	7e
624841	
Oquaga-----	7e
624845	
Farmington-----	7s
Galway-----	7s
624846	
Arnot-----	7s
626816	
Udifluents, occasionally flooded-----	2w
635458	
Oquaga, very rocky-----	6s
Lackawanna, very rocky-----	7s

# Soil Survey of Delaware Water Gap National Recreation Area

Table 2.--Land Capability Classification--Continued

Map unit symbol and component name	Land capability
635459	
Oquaga, very rocky-----	7s
Lackawanna, very rocky-----	7s
740953	
Delaware, rarely flooded-----	1
740968	
Nassau, very rocky-----	7s
Manlius, very rocky-----	6s
740969	
Nassau, very rocky-----	7s
Manlius, very rocky-----	7s
740971	
Oquaga, very rocky-----	6s
Lackawanna, very rocky-----	7s
740972	
Oquaga, very rocky-----	7s
Lackawanna, very rocky-----	7s
740974	
Oquaga-----	7e
740975	
Arnot-----	7s
740987	
Scio-----	2w
740988	
Udfluvents, occasionally flooded-----	2w
740991	
Unadilla-----	1
740992	
Unadilla-----	2e
740995	
Wellsboro, extremely stony-----	7s
740996	
Wellsboro, extremely stony-----	7s
741149	
Lackawanna, extremely stony-----	7s
741150	
Lackawanna, extremely stony-----	7s
801114	
Oquaga-----	3e
810906	
Oquaga-----	3e

# Soil Survey of Delaware Water Gap National Recreation Area

Table 2.--Land Capability Classification--Continued

Map unit symbol and component name	Land capability
1147465 Alden, extremely stony-----	7s
1147467 Arnot, very rocky-----	7s
Lordstown, very rocky-----	7s
1147468 Arnot-----	7s
Lordstown-----	7s
1147469 Arnot-----	7s
Lordstown-----	7s
1147470 Atherton, very poorly drained-----	3w
Atherton, poorly drained-----	3w
1147471 Catden-----	5w
1147474 Chippewa, extremely stony-----	7s
1147475 Colonie-----	2s
1147478 Delaware, rarely flooded-----	2e
1147482 Fredon, very stony-----	3w
Halsey, very stony-----	5w
1147485 Hazen, very stony-----	2e
Hoosic, very stony-----	3s
1147490 Hoosic, very stony-----	3e
Hazen, very stony-----	3e
1147491 Hoosic, very stony-----	7e
Otisville, very stony-----	7s
1147492 Lackawanna, extremely stony-----	7s
1147500 Wurtsboro, extremely stony-----	7s
1147501 Wurtsboro, extremely stony-----	7s
Swartswood, extremely stony-----	7s



# Soil Survey of Delaware Water Gap National Recreation Area

Table 2.--Land Capability Classification--Continued

Map unit symbol and component name	Land capability
1147502	
Wurtsboro, extremely stony-----	7s
Swartswood, extremely stony-----	7s
1147527	
Udorthents-----	3w
1147532	
Udorthents-----	3w
1147533	
Wurtsboro, extremely stony-----	7s
Swartswood, extremely stony-----	7s
1948749	
Arnot-----	3s
1948750	
Arnot-----	4e
1948751	
Arnot-----	6e
1948774	
Conotton-----	2e
1948775	
Conotton-----	3e
1948776	
Conotton-----	6e
1948777	
Conotton-----	7e
1948797	
Manlius-----	2s
1948802	
Manlius-----	3e
1948818	
Manlius-----	4e
1948832	
Penargyl-----	2e
1948846	
Phelps-----	2e
1948855	
Udorthents, loamy-----	7s
1948989	
Delaware-----	2e

# Soil Survey of Delaware Water Gap National Recreation Area

Table 3.--Prime Farmland and Other Important Farmland

[Only the soils considered prime or important farmland are listed. Urban or built-up areas of the soils listed are not considered prime or important farmland]

Map unit symbol	Map unit name	Farmland classification
296272	Bath channery silt loam, 3 to 8 percent slopes-----	All areas are prime farmland
296273	Bath channery silt loam, 8 to 15 percent slopes-----	Farmland of statewide importance
296280	Braceville gravelly loam, 0 to 3 percent slopes-----	All areas are prime farmland
296281	Braceville gravelly loam, 3 to 8 percent slopes-----	All areas are prime farmland
296312	Lackawanna channery loam, 2 to 8 percent slopes-----	All areas are prime farmland
296313	Lackawanna channery loam, 8 to 15 percent slopes-----	Farmland of statewide importance
296329	Mardin channery silt loam, 2 to 8 percent slopes-----	All areas are prime farmland
296330	Mardin channery silt loam, 8 to 15 percent slopes-----	Farmland of statewide importance
296335	Meckesville gravelly loam, 8 to 15 percent slopes-----	Farmland of statewide importance
296338	Morris channery silt loam, 2 to 10 percent slopes-----	Farmland of statewide importance
296343	Oquaga-Lackawanna channery loams, 3 to 8 percent slopes---	Farmland of statewide importance
296344	Oquaga-Lackawanna channery loams, 8 to 15 percent slopes---	Farmland of statewide importance
296348	Philo silt loam-----	All areas are prime farmland
296349	Pope silt loam-----	All areas are prime farmland
296350	Pope silt loam, high bottom-----	All areas are prime farmland
296351	Rexford gravelly silt loam, 0 to 3 percent slopes-----	Farmland of statewide importance
296355	Sheffield silt loam-----	Farmland of statewide importance
296376	Wellsboro channery loam, 3 to 8 percent slopes-----	All areas are prime farmland
296385	Wyoming gravelly sandy loam, 0 to 3 percent slopes-----	Farmland of statewide importance
296386	Wyoming gravelly sandy loam, 3 to 8 percent slopes-----	Farmland of statewide importance
296387	Wyoming gravelly sandy loam, 8 to 15 percent slopes-----	Farmland of statewide importance
297190	Braceville fine sandy loam-----	All areas are prime farmland
297192	Pope fine sandy loam-----	All areas are prime farmland
297203	Delaware fine sandy loam, 0 to 3 percent slopes-----	All areas are prime farmland
297204	Delaware fine sandy loam, 3 to 8 percent slopes-----	All areas are prime farmland
297209	Philo loam-----	All areas are prime farmland
297210	Barbour fine sandy loam-----	All areas are prime farmland
297229	Wyoming very cobbly sandy loam, 3 to 8 percent slopes-----	Farmland of statewide importance
297236	Suncook loamy sand, 0 to 8 percent slopes-----	Farmland of statewide importance
297237	Mardin channery silt loam, 0 to 8 percent slopes, stony---	All areas are prime farmland
297238	Mardin channery silt loam, 8 to 15 percent slopes, stony---	Farmland of statewide importance
297241	Unadilla silt loam-----	All areas are prime farmland
297247	Chenango gravelly fine sandy loam, 0 to 8 percent slopes---	All areas are prime farmland
297248	Chenango gravelly fine sandy loam, 8 to 15 percent slopes---	Farmland of statewide importance
298075	Colonie loamy fine sand, 3 to 8 percent slopes-----	Farmland of statewide importance
298255	Delaware fine sandy loam, 3 to 8 percent slopes, rarely   flooded-----	All areas are prime farmland
298256	Delaware fine sandy loam, 0 to 3 percent slopes, rarely   flooded-----	All areas are prime farmland
298257	Wallpack silt loam, 8 to 15 percent slopes-----	Farmland of statewide importance
298261	Wallpack silt loam, 3 to 8 percent slopes-----	All areas are prime farmland
318498	Hazen-Hoosic complex, 3 to 8 percent slopes, very stony---	All areas are prime farmland
318533	Hazen-Hoosic complex, 0 to 3 percent slopes, very stony---	All areas are prime farmland
319783	Catden mucky peat, 0 to 2 percent slopes-----	Farmland of unique importance
543246	Buchanan gravelly loam, 3 to 8 percent slopes-----	All areas are prime farmland
543271	Delaware fine sandy loam, 0 to 3 percent slopes-----	All areas are prime farmland
543327	Swartswood gravelly loam, 3 to 8 percent slopes-----	All areas are prime farmland
543328	Swartswood gravelly loam, 8 to 15 percent slopes-----	Farmland of statewide importance
543359	Volusia gravelly silt loam, 3 to 8 percent slopes-----	Farmland of statewide importance
543374	Wurtsboro gravelly silt loam, 3 to 8 percent slopes-----	All areas are prime farmland
543375	Wurtsboro gravelly silt loam, 8 to 15 percent slopes-----	Farmland of statewide importance
612280	Scio silt loam, 0 to 3 percent slopes-----	All areas are prime farmland
612666	Colonie loamy fine sand, 0 to 3 percent slopes-----	Farmland of statewide importance
612668	Hoosic-Hazen complex, 8 to 15 percent slopes, very stony---	Farmland of statewide importance
612753	Wallpack fine sandy loam, aeolian mantle, 8 to 15 percent   slopes, very stony-----	Farmland of statewide importance
612756	Wallpack fine sandy loam, aeolian mantle, 0 to 8 percent   slopes, very stony-----	All areas are prime farmland

# Soil Survey of Delaware Water Gap National Recreation Area

Table 3.--Prime Farmland and Other Important Farmland--Continued

Map unit symbol	Map unit name	Farmland classification
613447	Unadilla silt loam, 0 to 3 percent slopes-----	All areas are prime farmland
613448	Unadilla silt loam, 3 to 8 percent slopes-----	Farmland of statewide importance
624823	Lordstown-Wallpack complex, 8 to 15 percent slopes-----	Farmland of statewide importance
624824	Lordstown-Wallpack complex, 0 to 8 percent slopes-----	All areas are prime farmland
740953	Delaware fine sandy loam, 0 to 3 percent slopes, rarely flooded-----	All areas are prime farmland
740987	Scio silt loam, 0 to 3 percent slopes-----	All areas are prime farmland
740991	Unadilla silt loam, 0 to 3 percent slopes-----	All areas are prime farmland
740992	Unadilla silt loam, 3 to 8 percent slopes-----	Farmland of statewide importance
1147471	Catden mucky peat, 0 to 2 percent slopes-----	Farmland of unique importance
1147475	Colonie loamy fine sand, 0 to 3 percent slopes-----	Farmland of statewide importance
1147478	Delaware fine sandy loam, 3 to 8 percent slopes, rarely flooded-----	All areas are prime farmland
1147485	Hazen-Hoosic complex, 3 to 8 percent slopes, very stony----	All areas are prime farmland
1147490	Hoosic-Hazen complex, 8 to 15 percent slopes, very stony---	Farmland of statewide importance
1948749	Arnot channery silt loam, 3 to 8 percent slopes-----	Farmland of statewide importance
1948774	Conotton gravelly loam, 3 to 8 percent slopes-----	All areas are prime farmland
1948775	Conotton gravelly loam, 8 to 15 percent slopes-----	Farmland of statewide importance
1948797	Manlius channery silt loam, 3 to 8 percent slopes-----	All areas are prime farmland
1948802	Manlius channery silt loam, 8 to 15 percent slopes-----	Farmland of statewide importance
1948832	Penargyl channery silt loam, 3 to 8 percent slopes-----	All areas are prime farmland
1948846	Phelps gravelly silt loam, 3 to 8 percent slopes-----	All areas are prime farmland

# Soil Survey of Delaware Water Gap National Recreation Area

Table 4.--Hydric Soils

[This report lists only those map unit components that are rated as hydric. Definitions of hydric criteria codes are included at the bottom of the table]

Map unit symbol and map unit name	Component	Percent of map unit	Landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
296265 Alden mucky silt loam	Alden	100	Depressions on till plains	2B3, 3	Yes	No	Yes
296269 Alluvial land	Holly	20	Depressions on flood plains, backswamps	2B3	Yes	No	No
296271 Alvira and Watson very stony loams, 0 to 12 percent slopes	Shelmadine	10	Depressions	2B3	Yes	No	No
296280 Braceville gravelly loam, 0 to 3 percent slopes	Rexford, poorly drained	10	Depressions	2B3	Yes	No	No
296281 Braceville gravelly loam, 3 to 8 percent slopes	Rexford, poorly drained	5	Depressions	2B3	Yes	No	No
296283 Buchanan extremely stony loam, 0 to 8 percent slopes	Shelmadine	5	Depressions	2B3	Yes	No	No
296288 Chippewa and Norwich silt loams, 0 to 5 percent slopes	Chippewa	48	Depressions	2B3	Yes	No	No
	Norwich	48	Depressions	2B3	Yes	No	No
296289 Chippewa and Norwich extremely stony soils, 0 to 8 percent slopes	Chippewa	47	Depressions	2B3	Yes	No	No
	Norwich	47	Depressions	2B3	Yes	No	No
296304 Holly silt loam	Holly	100	Depressions on flood plains, backswamps	2B3	Yes	No	No
296329 Mardin channery silt loam, 2 to 8 percent slopes	Chippewa	3	Depressions	2B3	Yes	No	No
296330 Mardin channery silt loam, 8 to 15 percent slopes	Chippewa	2	Depressions	2B3	Yes	No	No

# Soil Survey of Delaware Water Gap National Recreation Area

Table 4.--Hydric Soils--Continued

Map unit symbol and map unit name	Component	Percent of map unit	Landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
296331 Mardin very stony silt loam, 0 to 8 percent slopes	Chippewa	4	Depressions	2B3, 3	Yes	No	Yes
296332 Mardin very stony silt loam, 8 to 25 percent slopes	Chippewa	1	Depressions	3, 2B3	Yes	No	Yes
296338 Morris channery silt loam, 2 to 10 percent slopes	Norwich	20	Depressions	2B3	Yes	No	No
296339 Morris extremely stony silt loam, 0 to 8 percent slopes	Norwich	25	Depressions	2B3	Yes	No	No
296340 Morris extremely stony silt loam, 8 to 20 percent slopes	Norwich	20	Depressions	2B3	Yes	No	No
296341 Mucky peat, deep	Freetown, mucky peat	100	Swamps	3, 1	No	No	Yes
296342 Mucky peat, shallow	Paupack, mucky peat (shallow)	100	Swamps	1	No	No	No
296348 Philo silt loam	Holly	10	Depressions on flood plains, backswamps	2B3	Yes	No	No
296349 Pope silt loam	Holly	8	Depressions on flood plains, backswamps	2B3	Yes	No	No
296350 Pope silt loam, high bottom	Holly	10	Depressions on flood plains, backswamps	2B3	Yes	No	No
296351 Rexford gravelly silt loam, 0 to 3 percent slopes	Rexford, poorly drained	35	Depressions	2B3	Yes	No	No
296355 Sheffield silt loam	Sheffield	100	Depressions on till plains	2B3	Yes	No	No
296369 Wayland silty clay loam	Wayland	100	Flood plains	4, 3, 2B3	Yes	Yes	Yes

# Soil Survey of Delaware Water Gap National Recreation Area

Table 4.--Hydric Soils--Continued

Map unit symbol and map unit name	Component	Percent of map unit	Landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
296376 Wellsboro channery loam, 3 to 8 percent slopes	Norwich	8	Depressions	2B3	Yes	No	No
296379 Wellsboro extremely stony loam, 8 to 25 percent slopes	Norwich	3	Depressions	2B3	Yes	No	No
297185 Edgemere-Shohola complex, 3 to 15 percent slopes, very rubbly	Edgemere Freetown	42 5	Depressions Swamps	3, 2B3 1, 3	Yes No	No No	Yes Yes
297186 Edgemere extremely stony loam, 0 to 3 percent slopes, very rubbly	Edgemere Freetown Wyalusing	75 4 4	Depressions Swamps Flood plains	3, 2B3 3, 1 4, 2B2	Yes No Yes	No No Yes	Yes Yes No
297190 Braceville fine sandy loam	Rexford, poorly drained	3	Outwash terraces	2B3	Yes	No	No
297191 Wyalusing fine sandy loam	Wyalusing	85	Flood plains	4, 2B2	Yes	Yes	No
297192 Pope fine sandy loam	Wyalusing	5	Flood plains	2B2, 4	Yes	Yes	No
297193 Paupack mucky peat	Paupack Edgemere Kimble	90 8 2	Swamps Depressions Depressions	1 2B3, 3 2B3	No Yes Yes	No No No	No Yes No
297196 Freetown mucky peat	Freetown Gleneyre	94 6	Swamps Relict lakebeds	3, 1 4, 3, 2B3	No Yes	No Yes	Yes Yes
297197 Manlius very channery silt loam, 3 to 8 percent slopes, very bouldery	Edgemere	3	Depressions	3, 2B3	Yes	No	Yes
297198 Manlius very channery silt loam, 8 to 15 percent slopes, very bouldery	Edgemere	2	Depressions	3, 2B3	Yes	No	Yes
297209 Philo loam	Wyalusing	2	Flood plains	2B2, 4	Yes	Yes	No

# Soil Survey of Delaware Water Gap National Recreation Area

Table 4.--Hydric Soils--Continued

Map unit symbol and map unit name	Component	Percent of map unit	Landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
297216 Wurtsboro stony fine sandy loam, 0 to 8 percent slopes, extremely stony	Edgemere	3	Depressions	2B3, 3	Yes	No	Yes
297217 Wurtsboro stony fine sandy loam, 8 to 15 percent slopes, extremely stony	Edgemere	1	Depressions	2B3, 3	Yes	No	Yes
297236 Suncook loamy sand, 0 to 8 percent slopes	Wyalusing	4	Flood plains	4, 2B2	Yes	Yes	No
297237 Mardin channery silt loam, 0 to 8 percent slopes, stony	Edgemere	3	Depressions	2B3, 3	Yes	No	Yes
297238 Mardin channery silt loam, 8 to 15 percent slopes, stony	Edgemere	3	Depressions	3, 2B3	Yes	No	Yes
297239 Mardin stony loam, 0 to 8 percent slopes, extremely stony	Edgemere	3	Depressions	3, 2B3	Yes	No	Yes
297240 Mardin stony loam, 8 to 15 percent slopes, extremely stony	Edgemere	3	Depressions	2B3, 3	Yes	No	Yes
297242 Shohola-Edgemere complex, 0 to 8 percent slopes, very rubbly	Edgemere	29	Depressions	2B3, 3	Yes	No	Yes
297243 Shohola-Edgemere complex, 8 to 15 percent slopes, very rubbly	Edgemere	29	Depressions	2B3, 3	Yes	No	Yes
297253 Craigsville-Wyoming complex, 0 to 8 percent slopes, extremely stony	Wyalusing	6	Flood plains	4, 2B2	Yes	Yes	No
298265 Venango silt loam, 0 to 8 percent slopes, extremely stony	Chippewa, extremely stony	10	Interdrumlins	2B3	Yes	No	No



# Soil Survey of Delaware Water Gap National Recreation Area

Table 4.--Hydric Soils--Continued

Map unit symbol and map unit name	Component	Percent of map unit	Landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
319783 Catden mucky peat, 0 to 2 percent slopes	Catden Alden Wallkill	85 13 2	Depressions Depressions Flood plains	1, 3 2B3, 3 3, 2B3	No Yes Yes	No No No	Yes Yes Yes
319784 Fredon-Halsey complex, 0 to 3 percent slopes, very stony	Halsey, very stony	40	Drainageways	2B3	Yes	No	No
543222 Andover-Buchanan gravelly loams, 0 to 8 percent slopes, extremely stony	Andover, extremely stony	55	Sandstone and shale hillslopes	2B3	Yes	No	No
543243 Berks-Weikert complex, 25 to 60 percent slopes	Brinkerton	2	Depressions	2B3	Yes	No	No
543246 Buchanan gravelly loam, 3 to 8 percent slopes	Andover	10	Depressions	2B3	Yes	No	No
543247 Buchanan gravelly loam, 0 to 8 percent slopes, extremely stony	Andover, extremely stony	5	Depressions	2B3	Yes	No	No
543257 Chippewa silt loam, 0 to 3 percent slopes	Chippewa	90	Depressions	2B3	Yes	No	No
543258 Chippewa silt loam, 3 to 8 percent slopes	Chippewa	90	Depressions	2B3	Yes	No	No
543259 Chippewa gravelly silt loam, 0 to 8 percent slopes, extremely stony	Chippewa, extremely stony	90	Depressions	2B3	Yes	No	No
543271 Delaware fine sandy loam, 0 to 3 percent slopes	Hatboro Nanticoke	1 1	Flood plains Tidal flats	2B3 3, 2B3	Yes Yes	No No	No Yes
543276 Fluvaquents	Fluvaquents Towhee Nanticoke	85 5 1	Flood plains Depressions, mountain valleys Tidal flats	2B3 2B3 2B3, 3	Yes Yes Yes	No No No	No No Yes

# Soil Survey of Delaware Water Gap National Recreation Area

Table 4.--Hydric Soils--Continued

Map unit symbol and map unit name	Component	Percent of map unit	Landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
543299 Laidig very gravelly loam, 0 to 8 percent slopes, extremely stony	Andover	4	Sandstone and shale hillslopes	2B3	Yes	No	No
543300 Laidig very gravelly loam, 8 to 25 percent slopes, extremely stony	Andover, extremely stony	4	Sandstone and shale hillslopes	2B3	Yes	No	No
543304 Laidig-Rubble land complex, 25 to 60 percent slopes	Andover	5	Sandstone and shale hillslopes	2B3	Yes	No	No
543327 Swartswood gravelly loam, 3 to 8 percent slopes	Chippewa	3	Depressions	2B3	Yes	No	No
543328 Swartswood gravelly loam, 8 to 15 percent slopes	Chippewa	3	Depressions	2B3	Yes	No	No
543330 Swartswood and Wurtsboro soils, 0 to 8 percent slopes, extremely stony	Chippewa, extremely stony	3	Depressions	2B3	Yes	No	No
543331 Swartswood and Wurtsboro soils, 8 to 25 percent slopes, extremely stony	Chippewa, extremely stony	3	Depressions	2B3	Yes	No	No
543359 Volusia gravelly silt loam, 3 to 8 percent slopes	Chippewa	10	Depressions	2B3	Yes	No	No
543360 Volusia gravelly silt loam, 0 to 8 percent slopes, extremely stony	Chippewa, extremely stony	10	Depressions	2B3	Yes	No	No
543374 Wurtsboro gravelly silt loam, 3 to 8 percent slopes	Chippewa	2	Depressions	2B3	Yes	No	No
	Halsey	2	Flood plains	2B3	Yes	No	No
543375 Wurtsboro gravelly silt loam, 8 to 15 percent slopes	Chippewa	2	Depressions	2B3	Yes	No	No
	Halsey	2	Flood plains	2B3	Yes	No	No

# Soil Survey of Delaware Water Gap National Recreation Area

Table 4.--Hydric Soils--Continued

Map unit symbol and map unit name	Component	Percent of map unit	Landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
612732 Atherton mucky silt loam, 0 to 3 percent slopes	Atherton, very poorly drained	60	Depressions	3, 2B3	Yes	No	Yes
	Atherton, poorly drained	30	Depressions	2B3, 3	Yes	No	Yes
612738 Fluvaquents, loamy, 0 to 3 percent slopes, occasionally flooded	Fluvaquents, occasionally flooded	90	Flood plains	2B3	Yes	No	No
613393 Alden silt loam, 0 to 8 percent slopes, extremely stony	Alden, extremely stony	90	Depressions	2B3, 3	Yes	No	Yes
	Chippewa, extremely stony	10	Depressions	2B3	Yes	No	No
623089 Chippewa silt loam, 0 to 8 percent slopes, extremely stony	Chippewa, extremely stony	80	Interdrumlins	2B3	Yes	No	No
	Alden, extremely stony	10	Interdrumlins	3, 2B3	Yes	No	Yes
626816 Udifluvents, 0 to 3 percent slopes, occasionally flooded	Fluvaquents, occasionally flooded	10	Flood plains	2B3	Yes	No	No
	Fluvaquents, occasionally flooded	10	Flood plains	2B3	Yes	No	No
1147465 Alden silt loam, 0 to 8 percent slopes, extremely stony	Alden, extremely stony	90	Depressions	2B3, 3	Yes	No	Yes
	Chippewa, extremely stony	10	Depressions	2B3	Yes	No	No
1147470 Atherton mucky silt loam, 0 to 3 percent slopes	Atherton, very poorly drained	60	Depressions	3, 2B3	Yes	No	Yes
	Atherton, poorly drained	30	Depressions	2B3, 3	Yes	No	Yes
1147471 Catden mucky peat, 0 to 2 percent slopes	Catden	85	Depressions	3, 1	No	No	Yes
	Alden	13	Depressions	3, 2B3	Yes	No	Yes
	Wallkill	2	Flood plains	2B3, 3	Yes	No	Yes

# Soil Survey of Delaware Water Gap National Recreation Area

Table 4.--Hydric Soils--Continued

Map unit symbol and map unit name	Component	Percent of map unit	Landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
1147474 Chippewa silt loam, 0 to 8 percent slopes, extremely stony	Chippewa, extremely stony	80	Interdrumlins	2B3	Yes	No	No
	Alden, extremely stony	10	Interdrumlins	2B3, 3	Yes	No	Yes
1147482 Fredon-Halsey complex, 0 to 3 percent slopes, very stony	Halsey, very stony	40	Drainageways	2B3	Yes	No	No
1948846 Phelps gravelly silt loam, 3 to 8 percent slopes	Halsey	4	Flood plains	2B3	Yes	No	No

## Explanation of hydric criteria codes:

1. All Histels except for Folistels and Histosols except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
  - A. are somewhat poorly drained and have a water table at the surface (0.0 feet) during the growing season, or
  - B. are poorly drained or very poorly drained and have either:
    - 1) a water table at the surface (0.0 feet) during the growing season if textures are coarse sand, sand, or fine sand in all layers within a depth of 20 inches, or
    - 2) a water table at a depth of 0.5 foot or less during the growing season if permeability is equal to or greater than 6.0 in/hr in all layers within a depth of 20 inches, or
    - 3) a water table at a depth of 1.0 foot or less during the growing season if permeability is less than 6.0 in/hr in any layer within a depth of 20 inches.
3. Soils that are frequently ponded for periods of long or very long duration during the growing season.
4. Soils that are frequently flooded for periods of long or very long duration during the growing season.

# Soil Survey of Delaware Water Gap National Recreation Area

Table 5.--Landscape, Landform, and Parent Material

[Only major components are displayed in the table. Miscellaneous nonsoil components may not be included. Components may not add up to 100 percent. MAP is the mean annual precipitation]

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landscape	Landform	Parent material
	Pct	Pct	Ft	In			
290836 Hoosic, very stony-	50	25-60	400-801	30-64	Outwash plain	Valley train	Glaciofluvial deposits derived from sandstone and shale
Otisville, very stony-----	40	25-60	400-801	30-64	Outwash plain	Valley train	Glaciofluvial deposits derived from sandstone and shale
296265 Alden-----	100	0-3	299-1499	30-45	Uplands	Depression on till plain	Till
296269 Fluents, (alluvial land)---	70	0-3	200-1001	35-45	River valley	Flood plain	Alluvium
296271 Alvira-----	55	0-12	---	36-56	Uplands	Glaciated hillslope	Till
Watson-----	35	0-12	---	34-51	Uplands	Valley side	Old till derived from sedimentary rock
296272 Bath-----	85	3-8	801-1801	30-40	Uplands	Glaciated mountain	Till
296273 Bath-----	85	8-15	801-1801	30-40	Uplands	Glaciated mountain	Till
296274 Bath-----	85	15-25	801-1801	30-40	Uplands	Glaciated mountain	Till
296275 Bath-----	90	3-8	801-1801	30-40	Uplands	Glaciated mountain	Loamy till derived mainly from gray and brown siltstone, sandstone, and shale
296276 Bath-----	90	8-25	801-1801	30-40	Uplands	Glaciated mountain	Loamy till derived mainly from gray and brown siltstone, sandstone, and shale
296277 Benson-----	55	0-8	89-1001	28-45	Glaciated upland	Hillslope	Loamy till
296278 Benson-----	60	8-25	89-1001	28-45	Glaciated upland	Hillslope	Loamy till
Rock outcrop-----	20	---	---	34-51	---	---	---

# Soil Survey of Delaware Water Gap National Recreation Area

Table 5.--Landscape, Landform, and Parent Material--Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landscape	Landform	Parent material
	<i>Pct</i>	<i>Pct</i>	<i>Ft</i>	<i>In</i>			
296279 Benson-----	60	25-70	89-1001	28-45	Glaciated upland	Hillslope	Loamy till
Rock outcrop-----	25	---	---	34-51	---	---	---
296280 Braceville-----	90	0-3	---	36-56	Upland	Outwash terrace	Coarse-loamy outwash
296281 Braceville-----	90	3-8	---	36-56	Uplands	Outwash terrace	Coarse-loamy outwash
296283 Buchanan-----	90	0-8	600-2402	38-46	Uplands	Mountain slope Valley side	Mountain slope colluvium derived from sedimentary rock
296288 Chippewa-----	48	0-5	801-1801	30-45	Uplands	Depression	Till
Norwich-----	48	0-5	49-499	33-45	Uplands	Depression	Till
296289 Chippewa-----	47	0-8	801-1801	30-45	Uplands	Depression	Till
Norwich-----	47	0-8	---	34-51	Uplands	Depression	Till
296295 Udorthents, cut and fill-----	90	0-25	---	34-51	---	---	Manmade and altered materials from mixed rock types
296297 Dekalb-----	100	8-25	1001-2799	36-60	Mountains	Mountain	Residuum weathered from sandstone and shale
296298 Dekalb-----	100	25-80	1001-2799	36-60	Mountains	Mountain	Residuum weathered from sandstone and shale
296303 Hazleton-----	100	8-25	1099-2500	36-55	Mountains	Gray & red sandstone mountain slope	Residuum weathered from sandstone
296304 Holly-----	100	0-3	801-840	30-40	Floodplain	Backswamp Depression on flood plain	Loamy alluvium derived from sandstone and shale
296311 Lackawanna-----	40	25-70	1099-1801	32-50	Uplands	Glaciated hillslope Ridge	Till
Bath-----	30	25-70	801-1801	30-40	Uplands	Glaciated mountain	Till

# Soil Survey of Delaware Water Gap National Recreation Area

Table 5.--Landscape, Landform, and Parent Material--Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landscape	Landform	Parent material
	<i>Pct</i>	<i>Pct</i>	<i>Ft</i>	<i>In</i>			
296312 Lackawanna-----	80	3-8	1099-1801	32-50	Uplands	Glaciated hillslope Ridge	Till
296313 Lackawanna-----	80	8-15	1099-1801	32-50	Uplands	Glaciated hillslope Ridge	Till
296315 Lackawanna-----	80	3-8	1099-1801	32-50	Uplands	Glaciated hillslope Ridge	Till
296316 Lackawanna-----	80	8-25	1099-1801	32-50	---	Glaciated hillslope Ridge	Till
296317 Laidig-----	100	0-8	400-3799	34-40	---	Mountain	Colluvium derived from sandstone and siltstone
296326 Lordstown-----	85	3-8	751-1801	32-50	Plateau	Hill	Till
296327 Lordstown-----	85	8-25	751-1801	32-50	Plateau	Hill	Till
296328 Lordstown-----	40	25-70	751-1801	32-50	Plateau	Hill	Till
Oquaga-----	35	25-60	699-1801	35-50	Glaciated upland	Hillslope	Reddish ablation till derived from sandstone and siltstone
296329 Mardin-----	85	3-8	801-1801	30-40	Glaciated upland	Hill	Till
296330 Mardin-----	85	8-15	801-1801	30-40	Glaciated upland	Hill	Loamy till
296331 Mardin-----	85	3-8	801-1801	30-40	Glaciated upland	Hill	Loamy till
296332 Mardin-----	87	8-25	801-1801	30-40	Glaciated upland	Hill	Loamy till
296335 Meckesville-----	100	8-15	600-2799	34-48	Mountains	Mountain valley	Sandstone, siltstone, and shale colluvium derived from sedimentary rock



# Soil Survey of Delaware Water Gap National Recreation Area

Table 5.--Landscape, Landform, and Parent Material--Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landscape	Landform	Parent material
	<i>Pct</i>	<i>Pct</i>	<i>Ft</i>	<i>In</i>			
296337 Meckesville-----	100	8-25	600-2799	34-48	Mountains	Mountain valley	Sandstone, siltstone, and shale colluvium derived from sedimentary rock
296338 Morris-----	80	3-8	600-1801	32-50	Glacial upland	Till plain	Reddish ablation till derived from sandstone and siltstone
296339 Morris-----	75	0-8	600-1801	32-50	Glacial upland	Till plain	Reddish ablation till derived from sandstone and siltstone
296340 Morris-----	80	0-20	600-1801	32-50	Glacial upland	Till plain	Reddish ablation till derived from sandstone and siltstone
296341 Freetown, mucky peat-----	100	0-2	---	34-51	Uplands	Swamp	Highly decomposed organic material
296342 Paupack, mucky peat (shallow)----	100	0-2	801-2001	42-47	Uplands	Swamp	Woody organic material over gravelly alluvium
296343 Oquaga-----	50	3-8	600-1801	35-50	Glaciated upland	Hillslope	Reddish ablation till derived from sandstone and siltstone
Lackawanna-----	35	3-8	1099-1801	32-50	Uplands	Glaciated hillslope Ridge	Reddish ablation till derived from sandstone and siltstone
296344 Oquaga-----	55	8-15	600-1801	35-50	Glaciated upland	Hillslope	Reddish ablation till derived from sandstone and siltstone
296344 Lackawanna-----	30	8-15	1099-1801	32-50	Uplands	Glaciated hillslope Ridge	Reddish ablation till derived from sandstone and siltstone

# Soil Survey of Delaware Water Gap National Recreation Area

Table 5.--Landscape, Landform, and Parent Material--Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landscape	Landform	Parent material
	<i>Pct</i>	<i>Pct</i>	<i>Ft</i>	<i>In</i>			
296346 Oquaga-----	50	0-8	699-1801	35-50	Glaciated upland	Hillslope	Reddish ablation till derived from sandstone and siltstone
Lackawanna-----	35	0-8	1099-1801	32-50	Uplands	Glaciated hillslope Ridge	Reddish ablation till derived from sandstone and siltstone
296347 Oquaga-----	60	8-25	699-1801	35-50	Glaciated upland	Hillslope	Reddish ablation till derived from sandstone and siltstone
Lackawanna-----	30	8-25	1099-1801	32-50	Uplands	Glaciated hillslope Ridge	Reddish ablation till derived from sandstone and siltstone
296348 Philo-----	85	0-3	600-2999	40-55	River valley	Flood plain	Coarse-loamy alluvium derived from sandstone and siltstone
296349 Pope-----	90	0-3	---	34-51	River valley	Flood plain	Coarse-loamy alluvium derived from sandstone and siltstone
296350 Pope-----	90	0-3	---	34-51	River valley	Flood plain	Coarse-loamy alluvium derived from sandstone and siltstone
296351 Rexford, somewhat poorly drained----	40	0-3	---	34-51	Uplands	Outwash plain	Coarse-loamy outwash derived from sandstone and shale
Rexford, poorly drained-----	35	0-3	---	34-51	Uplands	Depression	Coarse-loamy outwash derived from sandstone and shale
296355 Sheffield-----	100	0-3	925-1089	34-44	Uplands	Depression on till plain	Till
296363 Dystrochrepts, very stony-----	85	25-99	1099-2500	36-55	Mountains	Mountain slope	Colluvium
296369 Wayland-----	100	0-3	200-1499	30-40	River valley	Flood plain	Recent alluvium

# Soil Survey of Delaware Water Gap National Recreation Area

Table 5.--Landscape, Landform, and Parent Material--Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landscape	Landform	Parent material
	<i>Pct</i>	<i>Pct</i>	<i>Ft</i>	<i>In</i>			
296376 Wellsboro-----	80	3-8	1099-1801	32-50	Uplands	Valley side	Red till
296379 Wellsboro-----	85	8-25	1099-1801	32-50	Uplands	Valley side	Red till
296385 Wyoming-----	85	0-3	400-1801	42-50	Uplands	Terrace	Water sorted gravelly outwash derived from sandstone and siltstone and/or shale
296386 Wyoming-----	85	3-8	400-1801	42-50	Uplands	Terrace	Water sorted gravelly outwash derived from sandstone and siltstone and/or shale
296387 Wyoming-----	85	8-15	400-1801	42-50	Uplands	Terrace	Water sorted gravelly outwash derived from sandstone and siltstone and/or shale
296388 Wyoming-----	85	15-25	400-1801	42-50	Uplands	Terrace	Water sorted gravelly outwash derived from sandstone and siltstone and/or shale
296389 Wyoming-----	100	25-70	400-1801	42-50	Uplands	Terrace	Water sorted gravelly outwash derived from sandstone and siltstone and/or shale
296390 Water-----	100	---	---	34-51	---	---	---
297185 Edgemere-----	42	3-8	600-1299	35-50	---	Depression	Till
Shohola-----	42	3-15	600-1299	40-46	---	---	Till
297186 Edgemere-----	75	0-3	600-1299	35-50	Uplands	Depression	Till
297188 Manlius-----	40	15-30	200-1801	30-50	Uplands	Valley side	Channery till derived from shale
Arnot-----	35	15-30	---	34-51	Uplands	Valley side	Till
Rock outcrop-----	15	15-30	---	34-51	---	---	---

# Soil Survey of Delaware Water Gap National Recreation Area

Table 5.--Landscape, Landform, and Parent Material--Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landscape	Landform	Parent material
	<i>Pct</i>	<i>Pct</i>	<i>Ft</i>	<i>In</i>			
297189 Manlius-----	40	30-80	200-1801	30-50	Uplands	Valley side	Channery till derived from shale
Arnot-----	35	30-80	---	34-51	Uplands	Valley side	Till
Rock outcrop-----	15	30-80	---	34-51	---	---	---
297190 Braceville-----	82	0-3	400-899	44-47	Uplands	Outwash terrace	Outwash
297191 Wyalusing-----	85	0-3	400-801	30-50	River valley	Flood plain	Coarse-loamy alluvium over sandy and gravelly alluvium
297192 Pope-----	95	0-3	---	34-51	River valley	Flood plain	Acid alluvium derived from sedimentary rock
297193 Paupack-----	90	0-2	801-2001	42-47	Uplands	Swamp	Woody organic material over gravelly alluvium
297196 Freetown-----	94	0-1	---	34-51	Uplands	Swamp	Highly decomposed organic material
297197 Manlius-----	90	3-8	200-1801	30-50	Uplands	Valley side	Channery till derived from shale
297198 Manlius-----	86	8-15	200-1801	30-50	Uplands	Valley side	Channery till derived from shale
297201 Oquaga-----	75	15-30	699-1801	35-50	Glaciated upland	Hillslope	Reddish ablation till derived from sandstone and siltstone
297203 Delaware-----	93	0-3	400-600	35-50	River valley	Low to middle river terrace	Postglacial alluvium derived from sandstone and shale
297204 Delaware-----	82	3-8	400-600	35-50	River valley	Low to middle river terrace	Postglacial alluvium derived from sandstone and shale
297205 Delaware-----	80	8-20	400-600	35-50	River valley	Low to middle river terrace	Postglacial alluvium derived from sandstone and shale
297209 Philo-----	85	0-3	600-1401	35-50	River valley	Flood plain	Coarse-loamy alluvium derived from sandstone and siltstone

# Soil Survey of Delaware Water Gap National Recreation Area

Table 5.--Landscape, Landform, and Parent Material--Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landscape	Landform	Parent material
	Pct	Pct	Ft	In			
297210 Barbour-----	85	0-3	1000-1800	34-51	Valley	Flood plain	Recent alluvium
297216 Wurtsboro-----	92	0-8	1000-1800	34-51	Glacial upland	Hill	Coarse-loamy till derived from sandstone
297217 Wurtsboro-----	88	8-15	1000-1800	34-51	Glacial upland	Hill	Coarse-loamy till derived from sandstone
297227 Arnot-----	88	3-15	1001-1801	35-45	Uplands	Valley side	Till
297228 Arnot-----	85	15-35	1001-1801	35-45	Uplands	Valley side	Till
297229 Wyoming-----	90	3-8	400-1801	42-50	Uplands	Terrace	Outwash
297230 Wyoming-----	90	8-15	400-1801	42-50	Uplands	Terrace	Outwash
297231 Wyoming-----	90	15-30	400-1801	42-50	Uplands	Terrace	Outwash
297236 Suncook-----	91	0-8	400-1801	34-51	Valley	Flood plain	Sandy glaciofluvial deposits derived from sandstone
297237 Mardin-----	85	0-8	801-1801	30-40	Uplands	Hill	Loamy till
297238					Uplands	Hill	Loamy till
297239 Mardin-----	85	0-8	801-1801	30-40	Uplands	Hill	Loamy till
297240 Mardin-----	85	8-15	801-1801	30-40	Uplands	Hill	Loamy till
297241 Unadilla-----	90	0-3	400-600	42-50	Uplands	Outwash terrace	Outwash
297242 Shohola-----	62	0-8	600-1299	40-46	Uplands	Bench	Till
Edgemere-----	29	0-8	600-1299	35-50	Uplands	Depression	Till
297243 Shohola-----	62	8-15	600-1299	40-46	Uplands	Bench	---
Edgemere-----	29	8-15	600-1299	35-50	Uplands	Depression	Till
297244 Lordstown-----	40	0-8	751-1801	32-50	Uplands	Hill	Till
Swartswood-----	35	0-8	1001-1801	40-46	Upland	Hill	Coarse-loamy till derived from sandstone

# Soil Survey of Delaware Water Gap National Recreation Area

Table 5.--Landscape, Landform, and Parent Material--Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landscape	Landform	Parent material
	<i>Pct</i>	<i>Pct</i>	<i>Ft</i>	<i>In</i>			
297247 Chenango-----	86	0-8	400-1099	38-42	Uplands	Glacial outwash terrace	Till
297248 Chenango-----	85	8-15	400-1099	38-42	Uplands	Glacial outwash terrace	Till
297249 Chenango-----	90	15-25	400-1099	38-42	Uplands	Glacial outwash terrace	Till
297253 Craigs ville-----	50	0-5	899-3501	36-46	Mountains	Flood plain	---
Wyoming-----	40	0-8	400-1801	42-50	Uplands	Terrace	---
297254 Pits, shale-----	40	0-40	---	36-46	---	---	---
Pits, gravel-----	40	0-40	---	36-46	---	---	---
298049 Wurtsboro, extremely stony---	90	0-8	400-1804	30-64	Till plain	Ground moraine	Coarse-loamy till derived from sandstone
298050 Wurtsboro, extremely stony---	60	0-8	400-1102	30-64	Till plain	Ground moraine	Bouldery, quartzose, coarse-loamy drift derived from conglomerate
Swartswood, extremely stony---	40	0-8	400-1102	30-64	Till plain	Ground moraine	Bouldery, quartzose, coarse-loamy drift derived from conglomerate
298051 Wurtsboro, extremely stony---	60	8-15	400-1102	30-64	Till plain	Ground moraine	Bouldery, quartzose, coarse-loamy drift derived from conglomerate
298051 Swartswood, extremely stony---	40	8-15	400-1102	30-64	Till plain	Ground moraine	Bouldery, quartzose, coarse-loamy drift derived from conglomerate
298075 Colonie-----	80	3-8	755-1745	30-64	River valley	Outer terrace	Postglacial sandy alluvium, sandy eolian deposits, and/or glaciofluvial deposits

# Soil Survey of Delaware Water Gap National Recreation Area

Table 5.--Landscape, Landform, and Parent Material--Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landscape	Landform	Parent material
	Pct	Pct	Ft	In			
298188 Lackawanna, extremely stony---	85	15-35	1099-1801	30-64	Mountains	Ground moraine	Coarse-loamy till derived from sandstone and siltstone and/or coarse-loamy till derived from shale
298189 Lackawanna, extremely stony---	85	8-15	1099-1801	30-64	Mountains	Ground moraine	Coarse-loamy till derived from sandstone and siltstone and/or coarse-loamy till derived from shale
298221 Swartswood, extremely stony---	90	0-8	400-1804	30-64	Till plain	Ground moraine	Coarse-loamy till derived from sandstone
298222 Swartswood, extremely stony---	90	8-15	400-1804	30-64	Till plain	Ground moraine	Coarse-loamy till derived from sandstone
298223 Swartswood, extremely stony---	85	15-35	400-1804	30-64	Till plain	Ground moraine	Coarse-loamy till derived from sandstone
298255 Delaware, rarely flooded-----	80	3-8	400-600	30-64	River valley	Terrace	Postglacial coarse- loamy alluvium
298256 Delaware, rarely flooded-----	80	0-3	400-600	30-64	River valley	Terrace	Postglacial coarse- loamy alluvium
298257 Wallpack-----	85	8-15	400-1496	30-64	Till plain	Ridge	Coarse-loamy till derived from limestone, sandstone, and shale
298258 Wallpack-----	85	15-25	400-1496	30-64	Till plain	Ridge	Coarse-loamy till derived from limestone, sandstone, and shale



# Soil Survey of Delaware Water Gap National Recreation Area

Table 5.--Landscape, Landform, and Parent Material--Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landscape	Landform	Parent material
	<i>Pct</i>	<i>Pct</i>	<i>Ft</i>	<i>In</i>			
298259 Wallpack, extremely stony---	85	0-8	400-1496	30-64	Till plain	Ridge	Coarse-loamy till derived from limestone, sandstone, and shale
298260 Wallpack, extremely stony---	85	8-15	400-1496	30-64	Till plain	Ridge	Coarse-loamy till derived from limestone, sandstone, and shale
298261 Wallpack-----	85	0-8	400-1496	30-64	Till plain	Ridge	Coarse-loamy till derived from limestone, sandstone, and shale
298262 Wallpack, extremely stony---	85	15-35	400-1496	30-64	Till plain	Ridge	Coarse-loamy till derived from limestone, sandstone, and shale
298265 Venango, extremely stony-----	90	0-8	400-1001	30-64	Drumlin field	Drumlin	Fine-loamy till derived from limestone, sandstone, and shale
298266 Venango, extremely stony-----	85	8-15	400-1001	30-64	Drumlin field	Drumlin	Fine-loamy till derived from limestone, sandstone, and shale
298409 Swartswood, extremely stony---	90	0-8	400-1804	30-64	Till plain	Ground moraine	Coarse-loamy till derived from sandstone
298411 Swartswood, extremely stony---	90	8-15	400-1804	30-64	Till plain	Ground moraine	Coarse-loamy till derived from sandstone
298413 Swartswood, extremely stony---	85	15-35	400-1804	30-64	Till plain	Ground moraine	Coarse-loamy till derived from sandstone

# Soil Survey of Delaware Water Gap National Recreation Area

Table 5.--Landscape, Landform, and Parent Material--Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landscape	Landform	Parent material
	Pct	Pct	Ft	In			
318498 Hazen, very stony--	60	3-8	400-801	30-64	Outwash plain	Valley train	Coarse-loamy glaciofluvial deposits derived from limestone, sandstone, and shale
Hoosic, very stony-	35	3-8	400-801	30-64	Outwash plain	Valley train	Glaciofluvial deposits derived from sandstone and shale
318533 Hazen, very stony--	50	0-3	400-801	30-64	Outwash plain	Valley train	Coarse-loamy glaciofluvial deposits derived from limestone, sandstone, and shale
Hoosic, very stony-	40	0-3	400-801	30-64	Outwash plain	Valley train	Glaciofluvial deposits derived from sandstone and shale
319783 Catden-----	85	0-3	400-1804	30-64	Till plain	Depression	Herbaceous organic material and/or woody organic material
319784 Fredon, very stony-	50	0-3	400-801	30-64	Outwash plain	Drainageway	Coarse-loamy over sandy and gravelly glaciofluvial deposits derived from limestone, sandstone, and shale
319784 Halsey, very stony-	40	0-3	400-801	30-64	Outwash plain	Drainageway	Coarse-loamy over sandy and gravelly glaciofluvial deposits derived from limestone, sandstone, and shale
543222 Andover, extremely stony-----	55	0-8	600-1001	35-50	Colluvial valley	Sandstone and shale hillslope	Brown fine-loamy colluvium derived from sandstone and siltstone
Buchanan, extremely stony---	40	0-8	600-2402	38-46	Colluvial valley	Sandstone and shale hillslope	Colluvium derived from sandstone and shale

# Soil Survey of Delaware Water Gap National Recreation Area

Table 5.--Landscape, Landform, and Parent Material--Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landscape	Landform	Parent material
	<i>Pct</i>	<i>Pct</i>	<i>Ft</i>	<i>In</i>			
543243 Berks-----	65	25-60	499-1499	35-50	Uplands	Ridge Valley	Acid, brown residuum weathered from shale and siltstone
Weikert-----	25	25-60	499-1601	36-50	Valley	Shale hillslope	Acid, brown residuum weathered from shale and siltstone
543246 Buchanan-----	75	3-8	700-1400	38-46	Mountains	Mountain slope Valley side	Colluvium derived from sandstone and shale
543247 Buchanan, extremely stony---	80	0-8	700-1400	38-46	Mountains	Mountain slope Valley side	Stony colluvium derived from sandstone and shale
543257 Chippewa-----	90	0-3	801-1801	30-45	Upland	Depression	Till derived from sedimentary rock
543258 Chippewa-----	90	3-8	801-1801	30-45	Upland	Depression	Till derived from sedimentary rock
543259 Chippewa, extremely stony---	90	0-8	801-1801	30-45	Upland	Depression	Till derived from sedimentary rock
543271 Delaware-----	90	0-3	400-600	35-50	River valley	Low to middle river terrace	Postglacial alluvium derived from sandstone and shale
543276 Fluvaquents-----	85	0-2	7-801	40-48	Valley	Flood plain	Alluvium derived from sedimentary rock
543292 Hazleton, extremely stony---	90	8-25	1099-2500	36-55	Mountains	Gray & red sandstone mountain slope	Loamy residuum weathered from sandstone
543293 Hazleton, extremely stony---	90	25-60	1099-2500	36-55	Mountains	Gray & red sandstone mountain slope	Loamy residuum weathered from sandstone
543299 Laidig, extremely stony-----	90	0-8	400-3799	34-40	Mountains	Sandstone, conglomerate, quartzite, & shale colluvial mountain slope	Brown fine-loamy colluvium derived from sandstone and siltstone

# Soil Survey of Delaware Water Gap National Recreation Area

Table 5.--Landscape, Landform, and Parent Material--Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landscape	Landform	Parent material
	Pct	Pct	Ft	In			
543300 Laidig, extremely stony-----	90	8-25	400-3799	34-40	Mountains	Sandstone, conglomerate, quartzite, & shale colluvial mountain slope	Brown fine-loamy colluvium derived from sandstone and siltstone
543304 Laidig-----	50	25-60	400-3799	34-40	Mountains	Sandstone, conglomerate, quartzite, & shale colluvial mountain slope	Brown fine-loamy colluvium derived from sandstone and siltstone
Rubble land-----	40	25-60	1001-2999	36-50	Mountains	Sandstone, conglomerate, quartzite, & shale colluvial mountain slope	Stones and boulder fields of sandstone
543318 Rubble land-----	75	0-90	600-2000	36-50	Mountains	Mountain slope	Stones and boulder fields of sandstone
543327 Swartswood-----	90	3-8	1001-1801	40-46	Upland	Hill	Glacial till derived from quartzite, conglomerate, and/or sandstone
543328 Swartswood-----	90	8-15	1001-1801	40-46	Upland	Hill	Glacial till derived from quartzite, conglomerate, and/or sandstone
543330 Swartswood, extremely stony---	50	0-8	1001-1801	40-46	Upland	Hill	Glacial till derived from quartzite, conglomerate, and/or sandstone
Wurtsboro, extremely stony---	30	0-8	1001-1801	40-46	Glacial upland	Hill	Glacial till derived from quartzite, conglomerate, and/or sandstone
543331 Swartswood, extremely stony---	50	8-25	1001-1801	40-46	Upland	Hill	Glacial till derived from quartzite, conglomerate, and/or sandstone

# Soil Survey of Delaware Water Gap National Recreation Area

Table 5.--Landscape, Landform, and Parent Material--Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landscape	Landform	Parent material
	<i>Pct</i>	<i>Pct</i>	<i>Ft</i>	<i>In</i>			
543331 Wurtsboro, extremely stony---	30	8-25	1001-1801	40-46	Glacial upland	Hill	Glacial till derived from quartzite, conglomerate, and/or sandstone
543359 Volusia-----	85	3-8	801-1801	30-40	Plateau	Valley side	Fine-loamy basal till derived from sandstone and siltstone
543360 Volusia, extremely stony-----	85	0-8	801-1801	30-40	Plateau	Valley side	Fine-loamy basal till derived from sandstone and siltstone
543374 Wurtsboro-----	90	3-8	1001-1801	40-46	Glacial upland	Hill	Glacial till derived from quartzite, conglomerate, and/or sandstone
543375 Wurtsboro-----	90	8-15	1001-1801	40-46	Glacial upland	Hill	Glacial till derived from quartzite, conglomerate, and/or sandstone
612280 Scio-----	80	0-3	98-1001	30-64	River valley	Inner terrace	Postglacial coarse- silty alluvium
612666 Colonie-----	80	0-3	755-1745	30-64	River valley	Outer terrace	Postglacial sandy alluvium, sandy eolian deposits, and/or glaciofluvial deposits
612668 Hoosic, very stony-	60	8-15	400-801	30-64	Outwash plain	Valley train	Glaciofluvial deposits derived from sandstone and shale
Hazen, very stony--	30	8-15	400-801	30-64	Outwash plain	Valley train	Coarse-loamy glaciofluvial deposits derived from limestone, sandstone, and shale

# Soil Survey of Delaware Water Gap National Recreation Area

Table 5.--Landscape, Landform, and Parent Material--Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landscape	Landform	Parent material
	Pct	Pct	Ft	In			
612724 Lordstown, very rocky-----	50	15-35	400-801	30-64	Till plain	Ridge	Coarse-loamy till derived from limestone, sandstone, and shale
Wallpack, very rocky-----	40	15-35	400-801	30-64	Till plain	Ridge	Coarse-loamy till derived from limestone, sandstone, and shale
612732 Atherton, very poorly drained----	60	0-3	49-1499	30-64	River valley	Depression	Postglacial fine-silty alluvium
Atherton, poorly drained-----	30	0-3	49-1499	30-64	River valley	Depression	Postglacial fine-silty alluvium
612738 Fluvaquents, occasionally flooded-----	90	0-3	---	30-64	River valley	Flood plain	Recent alluvium
612753 Wallpack, aeolian mantle, very stony	85	8-15	400-801	30-64	Till plain	Ridge	Eolian deposits over coarse-loamy till derived from limestone, sandstone, and shale
612756 Wallpack, aeolian mantle, very stony	85	0-8	400-801	30-64	Till plain	Ridge	Eolian deposits over coarse-loamy till derived from limestone, sandstone, and shale
612757 Wallpack, aeolian mantle, very stony	85	15-35	400-801	30-64	Till plain	Ridge	Eolian deposits over coarse-loamy till derived from limestone, sandstone, and shale
612767 Wellsboro, extremely stony---	85	8-15	1099-1801	30-64	Mountains	Ground moraine	Coarse-loamy till derived from shale and/or coarse-loamy till derived from sandstone and siltstone

# Soil Survey of Delaware Water Gap National Recreation Area

Table 5.--Landscape, Landform, and Parent Material--Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landscape	Landform	Parent material
	Pct	Pct	Ft	In			
612768 Wellsboro, extremely stony---	85	0-8	1099-1801	30-64	Mountains	Ground moraine	Coarse-loamy till derived from shale and/or coarse-loamy till derived from sandstone and siltstone
613393 Alden, extremely stony-----	90	0-8	400-1804	30-64	Till plain	Depression	Silty colluvium derived from sandstone over fine-loamy till derived from sandstone
613447 Unadilla-----	85	0-3	600-1801	30-64	River valley	Inner terrace	Postglacial coarse- silty alluvium
613448 Unadilla-----	85	3-8	600-1801	30-64	River valley	Inner terrace	Postglacial coarse- silty alluvium
614075 Wurtsboro, extremely stony---	80	15-35	400-1102	30-64	Till plain	Ground moraine	Bouldery, quartzose, coarse-loamy drift derived from conglomerate
Swartswood, extremely stony---	20	15-35	400-1102	30-64	Till plain	Ground moraine	Bouldery, quartzose, coarse-loamy drift derived from conglomerate
620179 Arnot, very rocky--	55	0-15	400-1804	30-64	Mountains	Ground moraine	Loamy till derived from conglomerate
Lordstown, very rocky-----	40	0-15	400-1804	30-64	Mountains	Ground moraine	Coarse-loamy till derived from conglomerate
620180 Arnot-----	45	15-35	400-1804	30-64	Mountains	Ground moraine	Loamy till derived from conglomerate
Lordstown-----	40	15-35	400-1804	30-64	Mountains	Ground moraine	Coarse-loamy till derived from conglomerate
Rock outcrop-----	15	---	400-1804	30-64	Mountains	Ground moraine	Conglomerate
620181 Arnot-----	60	35-60	400-1804	30-64	Mountains	Ground moraine	Loamy till derived from conglomerate



# Soil Survey of Delaware Water Gap National Recreation Area

Table 5.--Landscape, Landform, and Parent Material--Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landscape	Landform	Parent material
	Pct	Pct	Ft	In			
620181 Lordstown-----	25	35-60	400-1804	30-64	Mountains	Ground moraine	Coarse-loamy till derived from conglomerate
Rock outcrop-----	15	---	400-1804	30-64	Mountains	Ground moraine	Conglomerate
623089 Chippewa, extremely stony---	80	0-8	400-1001	30-64	Drumlin field	Interdrumlin	Fine-loamy till derived from limestone, sandstone, and shale
623109 Farmington-----	50	0-15	400-902	30-64	Till plain	Ground moraine	Loamy till derived from limestone and dolomite
Rock outcrop-----	40	---	400-902	30-64	Till plain	Ground moraine	Limestone and dolomite
624811 Galway, very rocky-	80	35-60	400-902	30-64	Till plain	Ridge	Coarse-loamy till derived from limestone and dolomite
624813 Lackawanna, extremely stony---	85	0-8	1099-1801	30-64	Mountains	Ground moraine	Coarse-loamy till derived from shale and/or coarse-loamy till derived from sandstone and siltstone
624816 Lordstown, very rocky-----	50	8-15	400-801	30-64	Till plain	Ridge	Coarse-loamy till derived from limestone, sandstone, and shale
Wallpack, very rocky-----	35	8-15	400-801	30-64	Till plain	Ridge	Coarse-loamy till derived from limestone, sandstone, and shale
624822 Lordstown-----	50	15-25	400-801	30-64	Till plain	Ridge	Coarse-loamy till derived from limestone, sandstone, and shale
Wallpack-----	35	15-25	400-801	30-64	Till plain	Ridge	Coarse-loamy till derived from limestone, sandstone, and shale

# Soil Survey of Delaware Water Gap National Recreation Area

Table 5.--Landscape, Landform, and Parent Material--Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landscape	Landform	Parent material
	<i>Pct</i>	<i>Pct</i>	<i>Ft</i>	<i>In</i>			
624823 Lordstown-----	50	8-15	400-801	30-64	Till plain	Ridge	Coarse-loamy till derived from limestone, sandstone, and shale
Wallpack-----	35	8-15	400-801	30-64	Till plain	Ridge	Coarse-loamy till derived from limestone, sandstone, and shale
624824 Lordstown-----	50	0-8	400-801	30-64	Till plain	Ridge	Coarse-loamy till derived from limestone, sandstone, and shale
Wallpack-----	35	0-8	400-801	30-64	Till plain	Ridge	Coarse-loamy till derived from limestone, sandstone, and shale
624826 Manlius, very rocky	60	35-60	400-801	30-64	Till plain	Ridge	Loamy till derived from acid shale
Nassau, very rocky-	25	35-60	400-801	30-64	Till plain	Ridge	Loamy till derived from acid shale
624827 Nassau, very rocky-	55	0-8	400-1552	30-64	Till plain	Ground moraine	Loamy till derived from acid shale
Manlius, very rocky	44	0-8	400-1552	30-64	Till plain	Ground moraine	Loamy till derived from acid shale
624828 Nassau, very rocky-	55	8-15	400-1552	30-64	Till plain	Ground moraine	Loamy till derived from acid shale
Manlius, very rocky	44	8-15	400-1552	30-64	Till plain	Ground moraine	Loamy till derived from acid shale
624829 Nassau, very rocky-	55	15-35	400-1552	30-64	Till plain	Ground moraine	Loamy till derived from acid shale
Manlius, very rocky	44	15-35	400-1552	30-64	Till plain	Ground moraine	Loamy till derived from acid shale
624832 Nassau-----	50	35-60	400-1552	30-64	Till plain	Ground moraine	Loamy till derived from acid shale
Rock outcrop-----	45	---	400-1552	30-64	Till plain	Ground moraine	Acid shale
624841 Oquaga-----	60	35-60	699-1801	30-64	Mountains	Ground moraine	Loamy till derived from sandstone and siltstone and/or loamy till derived from shale
Rock outcrop-----	25	---	699-1801	30-64	Mountains	Ground moraine	Sandstone

# Soil Survey of Delaware Water Gap National Recreation Area

Table 5.--Landscape, Landform, and Parent Material--Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landscape	Landform	Parent material
	<i>Pct</i>	<i>Pct</i>	<i>Ft</i>	<i>In</i>			
624845 Rock outcrop-----	45	---	400-902	30-64	Till plain	Ground moraine	Limestone and dolomite
Farmington-----	35	15-35	400-902	30-64	Till plain	Ground moraine	Loamy till derived from limestone and dolomite
Galway-----	20	15-35	400-902	30-64	Till plain	Ground moraine	Coarse-loamy till derived from limestone and dolomite
624846 Rock outcrop-----	40	---	400-1804	30-64	Mountains	Ground moraine	Conglomerate
Arnot-----	30	60-80	400-1804	30-64	Mountains	Ground moraine	Loamy till derived from conglomerate
Rubble land-----	20	60-80	400-1804	30-64	Mountains	Talus slope	Talus derived from conglomerate
626816 Udifluvents, occasionally flooded-----	90	0-3	---	30-64	River valley	Flood plain	Coarse-loamy alluvium
635458 Oquaga, very rocky-	55	8-15	699-1801	30-64	Mountains	Ground moraine	Loamy till derived from sandstone and siltstone and/or loamy till derived from shale
Lackawanna, very rocky-----	30	8-15	1099-1801	30-64	Mountains	Ground moraine	Coarse-loamy till derived from sandstone and siltstone and/or coarse-loamy till derived from shale
635459 Oquaga, very rocky-	50	15-35	699-1801	30-64	Mountains	Ground moraine	Loamy till derived from sandstone and siltstone and/or loamy till derived from shale
Lackawanna, very rocky-----	35	15-35	1099-1801	30-64	Mountains	Ground moraine	Coarse-loamy till derived from sandstone and siltstone and/or coarse-loamy till derived from shale
740953 Delaware, rarely flooded-----	80	0-3	400-600	30-64	River valley	Terrace	Postglacial coarse- loamy alluvium

# Soil Survey of Delaware Water Gap National Recreation Area

Table 5.--Landscape, Landform, and Parent Material--Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landscape	Landform	Parent material
	<i>Pct</i>	<i>Pct</i>	<i>Ft</i>	<i>In</i>			
740968 Nassau, very rocky-	55	8-15	400-1552	30-64	Till plain	Ground moraine	Loamy till derived from acid shale
Manlius, very rocky	44	8-15	400-1552	30-64	Till plain	Ground moraine	Loamy till derived from acid shale
740969 Nassau, very rocky-	55	15-35	400-1552	30-64	Till plain	Ground moraine	Loamy till derived from acid shale
Manlius, very rocky	44	15-35	400-1552	30-64	Till plain	Ground moraine	Loamy till derived from acid shale
740971 Oquaga, very rocky-	55	8-15	699-1801	30-64	Mountains	Ground moraine	Loamy till derived from sandstone and siltstone and/or loamy till derived from shale
Lackawanna, very rocky-----	30	8-15	1099-1801	30-64	Mountains	Ground moraine	Coarse-loamy till derived from sandstone and siltstone and/or coarse-loamy till derived from shale
740972 Oquaga, very rocky-	50	15-35	699-1801	30-64	Mountains	Ground moraine	Loamy till derived from sandstone and siltstone and/or loamy till derived from shale
Lackawanna, very rocky-----	35	15-35	1099-1801	30-64	Mountains	Ground moraine	Coarse-loamy till derived from sandstone and siltstone and/or coarse-loamy till derived from shale
740974 Oquaga-----	60	35-60	699-1801	30-64	Mountains	Ground moraine	Loamy till derived from sandstone and siltstone and/or loamy till derived from shale
Rock outcrop-----	25	---	699-1801	30-64	Mountains	Ground moraine	Sandstone
740975 Rock outcrop-----	40	---	400-1804	30-64	Mountains	Ground moraine	Conglomerate
Arnot-----	30	60-80	400-1804	30-64	Mountains	Ground moraine	Loamy till derived from conglomerate
Rubble land-----	20	60-80	400-1804	30-64	Mountains	Talus slope	Talus derived from conglomerate

# Soil Survey of Delaware Water Gap National Recreation Area

Table 5.--Landscape, Landform, and Parent Material--Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landscape	Landform	Parent material
	<i>Pct</i>	<i>Pct</i>	<i>Ft</i>	<i>In</i>			
740987 Scio-----	80	0-3	98-1001	30-64	River valley	Inner terrace	Postglacial coarse- silty alluvium
740988 Udifluvents, occasionally flooded-----	90	0-3	---	30-64	River valley	Flood plain	Coarse-loamy alluvium
740991 Unadilla-----	85	0-3	600-1801	30-64	River valley	Inner terrace	Postglacial coarse- silty alluvium
740992 Unadilla-----	85	3-8	600-1801	30-64	River valley	Inner terrace	Postglacial coarse- silty alluvium
740995 Wellsboro, extremely stony---	85	0-8	1099-1801	30-64	Mountains	Ground moraine	Coarse-loamy till derived from shale and/or coarse-loamy till derived from sandstone and siltstone
740996 Wellsboro, extremely stony---	85	8-15	1099-1801	30-64	Mountains	Ground moraine	Coarse-loamy till derived from shale and/or coarse-loamy till derived from sandstone and siltstone
741149 Lackawanna, extremely stony---	85	8-15	1099-1801	30-64	Mountains	Ground moraine	Coarse-loamy till derived from sandstone and siltstone and/or coarse-loamy till derived from shale
741150 Lackawanna, extremely stony---	85	15-35	1099-1801	30-64	Mountains	Ground moraine	Coarse-loamy till derived from sandstone and siltstone and/or coarse-loamy till derived from shale
801114 Oquaga-----	75	0-15	699-1801	30-64	Mountains	Ground moraine	Loamy till derived from sandstone and siltstone and/or loamy till derived from shale
Rock outcrop-----	15	---	699-1801	30-64	Mountains	Ground moraine	Sandstone

# Soil Survey of Delaware Water Gap National Recreation Area

Table 5.--Landscape, Landform, and Parent Material--Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landscape	Landform	Parent material
	<i>Pct</i>	<i>Pct</i>	<i>Ft</i>	<i>In</i>			
810906 Oquaga-----	75	0-15	699-1801	30-64	Mountains	Ground moraine	Loamy till derived from sandstone and siltstone and/or loamy till derived from shale
Rock outcrop-----	15	---	699-1801	30-64	Mountains	Ground moraine	Sandstone
1147465 Alden, extremely stony-----	90	0-8	400-1804	30-64	Till plain	Depression	Silty colluvium derived from sandstone over fine-loamy till derived from sandstone
1147467 Arnot, very rocky--	55	0-15	400-1804	30-64	Mountains	Ground moraine	Loamy till derived from conglomerate
Lordstown, very rocky-----	40	0-15	400-1804	30-64	Mountains	Ground moraine	Coarse-loamy till derived from conglomerate
1147468 Arnot-----	45	15-35	400-1804	30-64	Mountains	Ground moraine	Loamy till derived from conglomerate
Lordstown-----	40	15-35	400-1804	30-64	Mountains	Ground moraine	Coarse-loamy till derived from conglomerate
Rock outcrop-----	15	---	400-1804	30-64	Mountains	Ground moraine	Conglomerate
1147469 Arnot-----	60	35-60	400-1804	30-64	Mountains	Ground moraine	Loamy till derived from conglomerate
Lordstown-----	25	35-60	400-1804	30-64	Mountains	Ground moraine	Coarse-loamy till derived from conglomerate
Rock outcrop-----	15	---	400-1804	30-64	Mountains	Ground moraine	Conglomerate
1147470 Atherton, very poorly drained----	60	0-3	49-1499	30-64	River valley	Depression	Postglacial fine-silty alluvium
Atherton, poorly drained-----	30	0-3	49-1499	30-64	River valley	Depression	Postglacial fine-silty alluvium
1147471 Catden-----	85	0-3	400-1804	30-64	Till plain	Depression	Herbaceous organic material and/or woody organic material

# Soil Survey of Delaware Water Gap National Recreation Area

Table 5.--Landscape, Landform, and Parent Material--Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landscape	Landform	Parent material
	Pct	Pct	Ft	In			
1147474 Chippewa, extremely stony---	80	0-8	400-1001	30-64	Drumlin field	Interdrumlin	Fine-loamy till derived from limestone, sandstone, and shale
1147475 Colonie-----	80	0-3	755-1745	30-64	River valley	Outer terrace	Postglacial sandy alluvium, sandy eolian deposits, and/or glaciofluvial deposits
1147478 Delaware, rarely flooded-----	80	3-8	400-600	30-64	River valley	Terrace	Postglacial coarse- loamy alluvium
1147482 Fredon, very stony-	50	0-3	400-801	30-64	Outwash plain	Drainageway	Coarse-loamy over sandy and gravelly glaciofluvial deposits derived from limestone, sandstone, and shale
Halsey, very stony-	40	0-3	400-801	30-64	Outwash plain	Drainageway	Coarse-loamy over sandy and gravelly glaciofluvial deposits derived from limestone, sandstone, and shale
1147485 Hazen, very stony--	60	3-8	400-801	30-64	Outwash plain	Valley train	Coarse-loamy glaciofluvial deposits derived from limestone, sandstone, and shale
Hoosic, very stony-	35	3-8	400-801	30-64	Outwash plain	Valley train	Glaciofluvial deposits derived from sandstone and shale
1147490 Hoosic, very stony-	60	8-15	400-801	30-64	Outwash plain	Valley train	Glaciofluvial deposits derived from sandstone and shale
Hazen, very stony--	30	8-15	400-801	30-64	Outwash plain	Valley train	Coarse-loamy glaciofluvial deposits derived from limestone, sandstone, and shale



# Soil Survey of Delaware Water Gap National Recreation Area

Table 5.--Landscape, Landform, and Parent Material--Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landscape	Landform	Parent material
	<i>Pct</i>	<i>Pct</i>	<i>Ft</i>	<i>In</i>			
1147491 Hoosic, very stony-	50	25-60	400-801	30-64	Outwash plain	Valley train	Glaciofluvial deposits derived from sandstone and shale
Otisville, very stony-----	40	25-60	400-801	30-64	Outwash plain	Valley train	Glaciofluvial deposits derived from sandstone and shale
1147492 Lackawanna, extremely stony---	85	0-8	1099-1801	30-64	Mountains	Ground moraine	Coarse-loamy till derived from shale and/or coarse-loamy till derived from sandstone and siltstone
1147500 Wurtsboro, extremely stony---	90	0-8	400-1804	30-64	Till plain	Ground moraine	Coarse-loamy till derived from sandstone
1147501 Wurtsboro, extremely stony---	60	0-8	400-1102	30-64	Till plain	Ground moraine	Bouldery, quartzose, coarse-loamy drift derived from conglomerate
Swartswood, extremely stony---	40	0-8	400-1102	30-64	Till plain	Ground moraine	Bouldery, quartzose, coarse-loamy drift derived from conglomerate
1147502 Wurtsboro, extremely stony---	60	8-15	400-1102	30-64	Till plain	Ground moraine	Bouldery, quartzose, coarse-loamy drift derived from conglomerate
Swartswood, extremely stony---	40	8-15	400-1102	30-64	Till plain	Ground moraine	Bouldery, quartzose, coarse-loamy drift derived from conglomerate
1147527 Udorthents-----	60	0-8	400-1496	30-64	Upland	Low hill	Fill and/or disturbed original soil material

# Soil Survey of Delaware Water Gap National Recreation Area

Table 5.--Landscape, Landform, and Parent Material--Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landscape	Landform	Parent material
	Pct	Pct	Ft	In			
1147527 Urban land-----	40	0-3	400-1496	30-64	Upland	Low hill	Buildings, pavement, and other impervious surfaces over fill and/or disturbed original soil material
1147532 Udorthents-----	100	0-8	400-1496	30-64	Upland	Low hill	Fill and/or disturbed original soil material
1147533 Wurtsboro, extremely stony---	80	15-35	400-1102	30-64	Till plain	Ground moraine	Bouldery, quartzose, coarse-loamy drift derived from conglomerate
Swartswood, extremely stony---	20	15-35	400-1102	30-64	Till plain	Ground moraine	Bouldery, quartzose, coarse-loamy drift derived from conglomerate
1948749 Arnot-----	90	3-8	1001-1801	35-45	Till plain	Valley side	Glacial till derived from sedimentary rock
1948750 Arnot-----	90	8-15	1001-1801	35-45	Till plain	Valley side	Glacial till derived from sedimentary rock
1948751 Arnot-----	90	15-25	1001-1801	35-45	Till plain	Valley side	Glacial till derived from sedimentary rock
1948774 Conotton-----	90	3-8	620-909	32-45	Outwash plain	Stream terrace	Stratified sand and gravel outwash
1948775 Conotton-----	95	8-15	620-909	32-45	Outwash plain	Stream terrace	Stratified sand and gravel outwash
1948776 Conotton-----	95	15-25	620-909	32-45	Outwash plain	Stream terrace	Stratified sand and gravel outwash
1948777 Conotton-----	95	25-65	620-909	32-45	Outwash plain	Stream terrace	Stratified sand and gravel outwash
1948797 Manlius-----	90	3-8	200-1801	30-50	Till plain	Valley side	Thin till derived from shale

# Soil Survey of Delaware Water Gap National Recreation Area

Table 5.--Landscape, Landform, and Parent Material--Continued

Map unit symbol and soil name	Percent of map unit	Slope	Elevation	MAP	Landscape	Landform	Parent material
	<i>Pct</i>	<i>Pct</i>	<i>Ft</i>	<i>In</i>			
1948802 Manlius-----	90	8-15	200-1801	30-50	Till plain	Valley side	Thin till derived from shale
1948818 Manlius-----	90	15-25	200-1801	30-50	Till plain	Valley side	Thin till derived from shale
1948832 Penargyl-----	90	3-8	299-2100	34-50	Upland	Valley side	Colluvium derived from shale and siltstone and/or loamy glacial till derived from sedimentary rock
1948846 Phelps-----	90	3-8	---	30-45	Outwash plain	Terrace	Silty or loamy over glacial outwash
1948855 Udorthents, loamy--	95	0-8	299-899	42-48	Upland	Ridge	Graded areas of loamy sedimentary rock
1948989 Urban land-----	65	0-8	---	36-46	Mountains	Hill Ridge Valley	Pavement, buildings, and other artificially covered areas
Delaware-----	25	0-8	400-600	35-50	River valley	Low to middle river terrace	Postglacial alluvium derived from sandstone and shale

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6a.--Land Management, Part I (Planting)

[Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting	Value	Suitability for mechanical planting	Value	Soil rutting hazard	
		Rating class and limiting features		Rating class and limiting features		Rating class and limiting features	Value
290836 Hoosic, very stony--	50	Moderately suited Slope Rock fragments	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.50	Moderate Low strength	0.50
Otisville, very stony-----	40	Moderately suited Sandiness Slope	0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 0.50 0.50	Moderate Low strength	0.50
296265 Alden-----	100	Well suited		Well suited		Severe Low strength	1.00
296269 Fluvents, (alluvial land)-----	70	Well suited		Well suited		Moderate Low strength	0.50
296271 Alvira-----	55	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Severe Low strength	1.00
Watson-----	35	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Severe Low strength	1.00
296272 Bath-----	85	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Slight Strength	0.10
296273 Bath-----	85	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Slight Strength	0.10
296274 Bath-----	85	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Slight Strength	0.10
296275 Bath-----	90	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Slight Strength	0.10
296276 Bath-----	90	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Slight Strength	0.10

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6a.--Land Management, Part I (Planting)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296277 Benson-----	55	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Severe Low strength	1.00
296278 Benson-----	60	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.75	Severe Low strength	1.00
Rock outcrop-----	20	Not rated		Not rated		Not rated	
296279 Benson-----	60	Moderately suited Slope Rock fragments	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Severe Low strength	1.00
Rock outcrop-----	25	Not rated		Not rated		Not rated	
296280 Braceville-----	90	Well suited		Well suited		Severe Low strength	1.00
296281 Braceville-----	90	Well suited		Moderately suited Slope	0.50	Severe Low strength	1.00
296283 Buchanan-----	90	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Severe Low strength	1.00
296288 Chippewa-----	48	Well suited		Moderately suited Rock fragments	0.50	Severe Low strength	1.00
Norwich-----	48	Well suited		Moderately suited Rock fragments	0.50	Severe Low strength	1.00
296289 Chippewa-----	47	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Moderate Low strength	0.50
Norwich-----	47	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Moderate Low strength	0.50
296295 Udorthents, cut and fill-----	90	Not rated		Not rated		Not rated	
296297 Dekalb-----	100	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Slight Strength	0.10
296298 Dekalb-----	100	Moderately suited Rock fragments Slope	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Slight Strength	0.10

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6a.--Land Management, Part I (Planting)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296303 Hazleton-----	100	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.75	Slight Strength	0.10
296304 Holly-----	100	Well suited		Well suited		Severe Low strength	1.00
296311 Lackawanna-----	40	Moderately suited Rock fragments Slope	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Severe Low strength	1.00
Bath-----	30	Moderately suited Rock fragments Slope	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Slight Strength	0.10
296312 Lackawanna-----	80	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Severe Low strength	1.00
296313 Lackawanna-----	80	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Severe Low strength	1.00
296315 Lackawanna-----	80	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Severe Low strength	1.00
296316 Lackawanna-----	80	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Severe Low strength	1.00
296317 Laidig-----	100	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Moderate Low strength	0.50
296326 Lordstown-----	85	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Severe Low strength	1.00
296327 Lordstown-----	85	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Severe Low strength	1.00
296328 Lordstown-----	40	Moderately suited Rock fragments Slope	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Severe Low strength	1.00
Oquaga-----	35	Moderately suited Rock fragments Slope	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Slight Strength	0.10

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6a.--Land Management, Part I (Planting)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296329 Mardin-----	85	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Slight Strength	0.10
296330 Mardin-----	85	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Slight Strength	0.10
296331 Mardin-----	85	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Severe Low strength	1.00
296332 Mardin-----	87	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Severe Low strength	1.00
296335 Meckesville-----	100	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Severe Low strength	1.00
296337 Meckesville-----	100	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Severe Low strength	1.00
296338 Morris-----	80	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Severe Low strength	1.00
296339 Morris-----	75	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Severe Low strength	1.00
296340 Morris-----	80	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Severe Low strength	1.00
296341 Freetown, mucky peat	100	Poorly suited Wetness Sandiness	0.75 0.50	Poorly suited Wetness Sandiness	0.75 0.50	Moderate Wetness	0.50
296342 Paupack, mucky peat (shallow)-----	100	Poorly suited Wetness Sandiness	0.75 0.50	Poorly suited Wetness Sandiness	0.75 0.50	Moderate Wetness Low strength	0.50 0.50
296343 Oquaga-----	50	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Slight Strength	0.10



# Soil Survey of Delaware Water Gap National Recreation Area

Table 6a.--Land Management, Part I (Planting)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting	Value	Suitability for mechanical planting	Value	Soil rutting hazard	
		Rating class and limiting features		Rating class and limiting features		Rating class and limiting features	Value
296343 Lackawanna-----	35	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Slight Strength	0.10
296344 Oquaga-----	55	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Slight Strength	0.10
Lackawanna-----	30	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Slight Strength	0.10
296346 Oquaga-----	50	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Slight Strength	0.10
Lackawanna-----	35	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Moderate Low strength	0.50
296347 Oquaga-----	60	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Slight Strength	0.10
Lackawanna-----	30	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Moderate Low strength	0.50
296348 Philo-----	85	Well suited		Well suited		Severe Low strength	1.00
296349 Pope-----	90	Well suited		Well suited		Severe Low strength	1.00
296350 Pope-----	90	Well suited		Well suited		Severe Low strength	1.00
296351 Rexford, somewhat poorly drained----	40	Well suited		Well suited		Severe Low strength	1.00
Rexford, poorly drained-----	35	Well suited		Well suited		Severe Low strength	1.00
296355 Sheffield-----	100	Well suited		Well suited		Severe Low strength	1.00
296363 Dystrochrepts, very stony-----	85	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Severe Low strength	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6a.--Land Management, Part I (Planting)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296369 Wayland-----	100	Well suited		Well suited		Severe Low strength	1.00
296376 Wellsboro-----	80	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Severe Low strength	1.00
296379 Wellsboro-----	85	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Severe Low strength	1.00
296385 Wyoming-----	85	Well suited		Moderately suited Rock fragments	0.50	Moderate Low strength	0.50
296386 Wyoming-----	85	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Moderate Low strength	0.50
296387 Wyoming-----	85	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Moderate Low strength	0.50
296388 Wyoming-----	85	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Moderate Low strength	0.50
296389 Wyoming-----	100	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Moderate Low strength	0.50
296390 Water-----	100	Not rated		Not rated		Not rated	
297185 Edgemere-----	42	Unsuited Rock fragments	1.00	Unsuited Rock fragments Slope	1.00 0.50	Moderate Low strength	0.50
Shohola-----	42	Unsuited Rock fragments	1.00	Unsuited Rock fragments Slope	1.00 0.50	Moderate Low strength	0.50
297186 Edgemere-----	75	Unsuited Rock fragments	1.00	Unsuited Rock fragments	1.00	Moderate Low strength	0.50
297188 Manlius-----	40	Poorly suited Rock fragments	0.75	Unsuited Rock fragments Slope	1.00 0.75	Slight Strength	0.10

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6a.--Land Management, Part I (Planting)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
297188 Arnot-----	35	Poorly suited Rock fragments	0.75	Unsuited Rock fragments Slope	1.00 0.75	Severe Low strength	1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
297189 Manlius-----	40	Poorly suited Rock fragments Slope	0.75 0.50	Unsuited Slope Rock fragments	1.00 1.00	Slight Strength	0.10
Arnot-----	35	Poorly suited Rock fragments Slope	0.75 0.50	Unsuited Slope Rock fragments	1.00 1.00	Severe Low strength	1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
297190 Braceville-----	82	Well suited		Well suited		Moderate Low strength	0.50
297191 Wyalusing-----	85	Well suited		Well suited		Severe Low strength	1.00
297192 Pope-----	95	Well suited		Well suited		Moderate Low strength	0.50
297193 Paupack-----	90	Poorly suited Wetness Sandiness	0.75 0.50	Poorly suited Wetness Sandiness	0.75 0.50	Moderate Wetness Low strength	0.50 0.50
297196 Freetown-----	94	Poorly suited Wetness Sandiness	0.75 0.50	Poorly suited Wetness Sandiness	0.75 0.50	Moderate Wetness	0.50
297197 Manlius-----	90	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Slight Strength	0.10
297198 Manlius-----	86	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Slight Strength	0.10
297201 Oquaga-----	75	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Moderate Low strength	0.50
297203 Delaware-----	93	Well suited		Well suited		Severe Low strength	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6a.--Land Management, Part I (Planting)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting	Value	Suitability for mechanical planting	Value	Soil rutting hazard	
		Rating class and limiting features		Rating class and limiting features		Rating class and limiting features	Value
297204 Delaware-----	82	Well suited		Moderately suited Slope	0.50	Moderate Low strength	0.50
297205 Delaware-----	80	Well suited		Moderately suited Slope	0.50	Moderate Low strength	0.50
297209 Philo-----	85	Well suited		Well suited		Severe Low strength	1.00
297210 Barbour-----	85	Well suited		Well suited		Severe Low strength	1.00
297216 Wurtsboro-----	92	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Moderate Low strength	0.50
297217 Wurtsboro-----	88	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Moderate Low strength	0.50
297227 Arnot-----	88	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Slight Strength	0.10
297228 Arnot-----	85	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Slight Strength	0.10
297229 Wyoming-----	90	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Moderate Low strength	0.50
297230 Wyoming-----	90	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Moderate Low strength	0.50
297231 Wyoming-----	90	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Moderate Low strength	0.50
297236 Suncook-----	91	Well suited		Well suited		Moderate Low strength	0.50
297237 Mardin-----	85	Well suited		Moderately suited Rock fragments	0.50	Moderate Low strength	0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6a.--Land Management, Part I (Planting)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
297238 Mardin-----	85	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Moderate Low strength	0.50
297239 Mardin-----	85	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Moderate Low strength	0.50
297240 Mardin-----	85	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Moderate Low strength	0.50
297241 Unadilla-----	90	Well suited		Well suited		Severe Low strength	1.00
297242 Shohola-----	62	Unsuited Rock fragments	1.00	Unsuited Rock fragments	1.00	Moderate Low strength	0.50
Edgemere-----	29	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Moderate Low strength	0.50
297243 Shohola-----	62	Unsuited Rock fragments	1.00	Unsuited Rock fragments Slope	1.00 0.50	Moderate Low strength	0.50
Edgemere-----	29	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Moderate Low strength	0.50
297244 Lordstown-----	40	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Severe Low strength	1.00
Swartswood-----	35	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Moderate Low strength	0.50
297247 Chenango-----	86	Well suited		Moderately suited Rock fragments	0.50	Moderate Low strength	0.50
297248 Chenango-----	85	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Moderate Low strength	0.50
297249 Chenango-----	90	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Moderate Low strength	0.50
297253 Craigs ville-----	50	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Moderate Low strength	0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6a.--Land Management, Part I (Planting)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
297253 Wyoming-----	40	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Moderate Low strength	0.50
297254 Pits, shale-----	40	Not rated		Not rated		Not rated	
Pits, gravel-----	40	Not rated		Not rated		Not rated	
298049 Wurtsboro, extremely stony----	90	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Severe Low strength	1.00
298050 Wurtsboro, extremely stony----	60	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Severe Low strength	1.00
Swartswood, extremely stony----	40	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Severe Low strength	1.00
298051 Wurtsboro, extremely stony----	60	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Severe Low strength	1.00
Swartswood, extremely stony----	40	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Severe Low strength	1.00
298075 Colonie-----	80	Well suited		Moderately suited Slope	0.50	Moderate Low strength	0.50
298188 Lackawanna, extremely stony----	85	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Severe Low strength	1.00
298189 Lackawanna, extremely stony----	85	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Severe Low strength	1.00
298221 Swartswood, extremely stony----	90	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Severe Low strength	1.00
298222 Swartswood, extremely stony----	90	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Severe Low strength	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6a.--Land Management, Part I (Planting)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
298223 Swartswood, extremely stony----	85	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Severe Low strength	1.00
298255 Delaware, rarely flooded-----	80	Well suited		Moderately suited Slope	0.50	Moderate Low strength	0.50
298256 Delaware, rarely flooded-----	80	Well suited		Well suited		Moderate Low strength	0.50
298257 Wallpack-----	85	Well suited		Moderately suited Slope	0.50	Severe Low strength	1.00
298258 Wallpack-----	85	Well suited		Poorly suited Slope	0.75	Severe Low strength	1.00
298259 Wallpack, extremely stony-----	85	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Severe Low strength	1.00
298260 Wallpack, extremely stony-----	85	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Severe Low strength	1.00
298261 Wallpack-----	85	Well suited		Well suited		Severe Low strength	1.00
298262 Wallpack, extremely stony-----	85	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Severe Low strength	1.00
298265 Venango, extremely stony-----	90	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Severe Low strength	1.00
298266 Venango, extremely stony-----	85	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Severe Low strength	1.00
298409 Swartswood, extremely stony----	90	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Severe Low strength	1.00



# Soil Survey of Delaware Water Gap National Recreation Area

Table 6a.--Land Management, Part I (Planting)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
298411 Swartswood, extremely stony----	90	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Severe Low strength	1.00
298413 Swartswood, extremely stony----	85	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Severe Low strength	1.00
298461 Water-----	100	Not rated		Not rated		Not rated	
318498 Hazen, very stony---	60	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Severe Low strength	1.00
Hoosic, very stony--	35	Moderately suited Rock fragments	0.50	Moderately suited Rock fragments Slope	0.50 0.50	Moderate Low strength	0.50
318533 Hazen, very stony---	50	Well suited		Moderately suited Rock fragments	0.50	Severe Low strength	1.00
Hoosic, very stony--	40	Moderately suited Rock fragments	0.50	Moderately suited Rock fragments	0.50	Moderate Low strength	0.50
319783 Catden-----	85	Well suited		Well suited		Severe Low strength	1.00
319784 Fredon, very stony--	50	Well suited		Moderately suited Rock fragments	0.50	Severe Low strength	1.00
Halsey, very stony--	40	Well suited		Moderately suited Rock fragments	0.50	Severe Low strength	1.00
543222 Andover, extremely stony-----	55	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Severe Low strength	1.00
Buchanan, extremely stony-----	40	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Moderate Low strength	0.50
543243 Berk-----	65	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Moderate Low strength	0.50
Weikert-----	25	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Slight Strength	0.10

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6a.--Land Management, Part I (Planting)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
543246 Buchanan-----	75	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Moderate Low strength	0.50
543247 Buchanan, extremely stony-----	80	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Moderate Low strength	0.50
543257 Chippewa-----	90	Well suited		Moderately suited Rock fragments	0.50	Severe Low strength	1.00
543258 Chippewa-----	90	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Severe Low strength	1.00
543259 Chippewa, extremely stony-----	90	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Moderate Low strength	0.50
543271 Delaware-----	90	Well suited		Well suited		Moderate Low strength	0.50
543276 Fluvaquents-----	85	Well suited		Well suited		Moderate Low strength	0.50
543292 Hazleton, extremely stony-----	90	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.75	Slight Strength	0.10
543293 Hazleton, extremely stony-----	90	Moderately suited Rock fragments Slope	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Slight Strength	0.10
543299 Laidig, extremely stony-----	90	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Moderate Low strength	0.50
543300 Laidig, extremely stony-----	90	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Moderate Low strength	0.50
543304 Laidig-----	50	Moderately suited Rock fragments Slope	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Moderate Low strength	0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6a.--Land Management, Part I (Planting)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
543304 Rubble land-----	40	Moderately suited Sandiness	0.50	Unsuited Rock fragments	1.00	Slight Strength	0.10
		Rock fragments	0.50	Slope	1.00		
		Slope	0.50	Sandiness	0.50		
543318 Rubble land-----	75	Moderately suited Slope	0.50	Unsuited Rock fragments	1.00	Slight Strength	0.10
		Sandiness	0.50	Slope	1.00		
		Rock fragments	0.50	Sandiness	0.50		
543327 Swartswood-----	90	Well suited		Moderately suited Slope	0.50	Moderate Low strength	0.50
				Rock fragments	0.50		
543328 Swartswood-----	90	Well suited		Moderately suited Slope	0.50	Moderate Low strength	0.50
				Rock fragments	0.50		
543330 Swartswood, extremely stony----	50	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Moderate Low strength	0.50
Wurtsboro, extremely stony----	30	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Moderate Low strength	0.50
543331 Swartswood, extremely stony----	50	Moderately suited Rock fragments	0.50	Poorly suited Slope	0.75	Moderate Low strength	0.50
				Rock fragments	0.75		
Wurtsboro, extremely stony----	30	Moderately suited Rock fragments	0.50	Poorly suited Slope	0.75	Moderate Low strength	0.50
				Rock fragments	0.75		
543359 Volusia-----	85	Well suited		Moderately suited Slope	0.50	Severe Low strength	1.00
				Rock fragments	0.50		
543360 Volusia, extremely stony-----	85	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Severe Low strength	1.00
543374 Wurtsboro-----	90	Well suited		Moderately suited Slope	0.50	Moderate Low strength	0.50
543375 Wurtsboro-----	90	Well suited		Moderately suited Slope	0.50	Moderate Low strength	0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6a.--Land Management, Part I (Planting)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
612280 Scio-----	80	Well suited		Well suited		Severe Low strength	1.00
612666 Colonie-----	80	Well suited		Well suited		Moderate Low strength	0.50
612668 Hoosic, very stony--	60	Moderately suited Rock fragments	0.50	Moderately suited Rock fragments Slope	0.50 0.50	Moderate Low strength	0.50
Hazen, very stony---	30	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Severe Low strength	1.00
612724 Lordstown, very rocky-----	50	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Severe Low strength	1.00
Wallpack, very rocky	40	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Severe Low strength	1.00
612732 Atherton, very poorly drained----	60	Poorly suited Wetness	0.75	Poorly suited Wetness	0.75	Severe Low strength	1.00
Atherton, poorly drained-----	30	Well suited		Well suited		Severe Low strength	1.00
612738 Fluvaquents, occasionally flooded-----	90	Moderately suited Stickiness; high plasticity index	0.50	Moderately suited Stickiness; high plasticity index	0.50	Severe Low strength	1.00
612753 Wallpack, aeolian mantle, very stony-	85	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Moderate Low strength	0.50
612756 Wallpack, aeolian mantle, very stony-	85	Well suited		Moderately suited Rock fragments	0.50	Moderate Low strength	0.50
612757 Wallpack, aeolian mantle, very stony-	85	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Moderate Low strength	0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6a.--Land Management, Part I (Planting)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
612767 Wellsboro, extremely stony----	85	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Severe Low strength	1.00
612768 Wellsboro, extremely stony----	85	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Severe Low strength	1.00
613393 Alden, extremely stony-----	90	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Severe Low strength	1.00
613447 Unadilla-----	85	Well suited		Well suited		Severe Low strength	1.00
613448 Unadilla-----	85	Well suited		Moderately suited Slope	0.50	Severe Low strength	1.00
614075 Wurtsboro, extremely stony----	80	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Severe Low strength	1.00
Swartswood, extremely stony----	20	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Severe Low strength	1.00
620179 Arnot, very rocky---	55	Poorly suited Rock fragments	0.75	Unsuited Rock fragments Slope	1.00 0.50	Severe Low strength	1.00
Lordstown, very rocky-----	40	Poorly suited Rock fragments	0.75	Unsuited Rock fragments Slope	1.00 0.50	Severe Low strength	1.00
620180 Arnot-----	45	Poorly suited Rock fragments	0.75	Unsuited Rock fragments Slope	1.00 0.75	Severe Low strength	1.00
Lordstown-----	40	Poorly suited Rock fragments	0.75	Unsuited Rock fragments Slope	1.00 0.75	Severe Low strength	1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
620181 Arnot-----	60	Poorly suited Rock fragments Slope	0.75 0.50	Unsuited Slope Rock fragments	1.00 1.00	Severe Low strength	1.00

Soil Survey of Delaware Water Gap National Recreation Area

Table 6a.--Land Management, Part I (Planting)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
620181 Lordstown-----	25	Poorly suited Rock fragments Slope	0.75 0.50	Unsuited Slope Rock fragments	1.00 1.00	Severe Low strength	1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
623089 Chippewa, extremely stony-----	80	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Severe Low strength	1.00
623109 Farmington-----	50	Poorly suited Rock fragments	0.75	Unsuited Rock fragments Slope	1.00 0.50	Severe Low strength	1.00
Rock outcrop-----	40	Not rated		Not rated		Not rated	
624811 Galway, very rocky--	80	Poorly suited Rock fragments Slope	0.75 0.50	Unsuited Slope Rock fragments	1.00 1.00	Severe Low strength	1.00
624813 Lackawanna, extremely stony----	85	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Severe Low strength	1.00
624816 Lordstown, very rocky-----	50	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Severe Low strength	1.00
Wallpack, very rocky	35	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Severe Low strength	1.00
624822 Lordstown-----	50	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Severe Low strength	1.00
Wallpack-----	35	Well suited		Poorly suited Slope	0.75	Severe Low strength	1.00
624823 Lordstown-----	50	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Severe Low strength	1.00
Wallpack-----	35	Well suited		Moderately suited Slope	0.50	Severe Low strength	1.00
624824 Lordstown-----	50	Well suited		Moderately suited Rock fragments	0.50	Severe Low strength	1.00
Wallpack-----	35	Well suited		Well suited		Severe Low strength	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6a.--Land Management, Part I (Planting)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
624826 Manlius, very rocky--	60	Moderately suited Slope Rock fragments	0.50 0.50	Unsuited Slope Rock fragments	1.00 1.00	Moderate Low strength	0.50
Nassau, very rocky--	25	Moderately suited Slope Rock fragments	0.50 0.50	Unsuited Slope Rock fragments	1.00 1.00	Moderate Low strength	0.50
624827 Nassau, very rocky--	55	Moderately suited Rock fragments	0.50	Unsuited Rock fragments	1.00	Severe Low strength	1.00
Manlius, very rocky--	44	Moderately suited Rock fragments	0.50	Unsuited Rock fragments	1.00	Severe Low strength	1.00
624828 Nassau, very rocky--	55	Moderately suited Rock fragments	0.50	Unsuited Rock fragments Slope	1.00 0.50	Severe Low strength	1.00
Manlius, very rocky--	44	Moderately suited Rock fragments	0.50	Unsuited Rock fragments Slope	1.00 0.50	Severe Low strength	1.00
624829 Nassau, very rocky--	55	Moderately suited Rock fragments	0.50	Unsuited Rock fragments Slope	1.00 0.75	Severe Low strength	1.00
Manlius, very rocky--	44	Moderately suited Rock fragments	0.50	Unsuited Rock fragments Slope	1.00 0.75	Severe Low strength	1.00
624832 Nassau-----	50	Moderately suited Slope Rock fragments	0.50 0.50	Unsuited Slope Rock fragments	1.00 1.00	Moderate Low strength	0.50
Rock outcrop-----	45	Not rated		Not rated		Not rated	
624841 Oquaga-----	60	Moderately suited Slope Rock fragments	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Severe Low strength	1.00
Rock outcrop-----	25	Not rated		Not rated		Not rated	
624845 Rock outcrop-----	45	Not rated		Not rated		Not rated	
Farmington-----	35	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Severe Low strength	1.00
Galway-----	20	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Severe Low strength	1.00



# Soil Survey of Delaware Water Gap National Recreation Area

Table 6a.--Land Management, Part I (Planting)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
624846 Rock outcrop-----	40	Not rated		Not rated		Not rated	
Arnot-----	30	Poorly suited Rock fragments Slope	0.75 0.50	Unsuited Slope Rock fragments	1.00 1.00	Severe Low strength	1.00
Rubble land-----	20	Unsuited Rock fragments Slope Sandiness	1.00 0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 1.00 0.50	Slight	
626816 Udifluvents, occasionally flooded-----	90	Well suited		Well suited		Moderate Low strength	0.50
635458 Oquaga, very rocky--	55	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Severe Low strength	1.00
Lackawanna, very rocky-----	30	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Severe Low strength	1.00
635459 Oquaga, very rocky--	50	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Severe Low strength	1.00
Lackawanna, very rocky-----	35	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Severe Low strength	1.00
740953 Delaware, rarely flooded-----	80	Well suited		Well suited		Moderate Low strength	0.50
740968 Nassau, very rocky--	55	Moderately suited Rock fragments	0.50	Unsuited Rock fragments Slope	1.00 0.50	Severe Low strength	1.00
Manlius, very rocky-	44	Moderately suited Rock fragments	0.50	Unsuited Rock fragments Slope	1.00 0.50	Severe Low strength	1.00
740969 Nassau, very rocky--	55	Moderately suited Rock fragments	0.50	Unsuited Rock fragments Slope	1.00 0.75	Severe Low strength	1.00
Manlius, very rocky-	44	Moderately suited Rock fragments	0.50	Unsuited Rock fragments Slope	1.00 0.75	Severe Low strength	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6a.--Land Management, Part I (Planting)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
740971 Oquaga, very rocky--	55	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Severe Low strength	1.00
Lackawanna, very rocky-----	30	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Severe Low strength	1.00
740972 Oquaga, very rocky--	50	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Severe Low strength	1.00
Lackawanna, very rocky-----	35	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Severe Low strength	1.00
740974 Oquaga-----	60	Moderately suited Slope Rock fragments	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.75	Severe Low strength	1.00
Rock outcrop-----	25	Not rated		Not rated		Not rated	
740975 Rock outcrop-----	40	Not rated		Not rated		Not rated	
Arnot-----	30	Poorly suited Rock fragments Slope	0.75 0.50	Unsuited Slope Rock fragments	1.00 1.00	Severe Low strength	1.00
Rubble land-----	20	Unsuited Rock fragments Slope Sandiness	1.00 0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 1.00 0.50	Slight	
740987 Scio-----	80	Well suited		Well suited		Severe Low strength	1.00
740988 Udifluvents, occasionally flooded-----	90	Well suited		Well suited		Moderate Low strength	0.50
740991 Unadilla-----	85	Well suited		Well suited		Severe Low strength	1.00
740992 Unadilla-----	85	Well suited		Moderately suited Slope	0.50	Severe Low strength	1.00

Soil Survey of Delaware Water Gap National Recreation Area

Table 6a.--Land Management, Part I (Planting)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
740995 Wellsboro, extremely stony----	85	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Severe Low strength	1.00
740996 Wellsboro, extremely stony----	85	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Severe Low strength	1.00
741149 Lackawanna, extremely stony----	85	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Severe Low strength	1.00
741150 Lackawanna, extremely stony----	85	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Severe Low strength	1.00
801114 Oquaga-----	75	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Severe Low strength	1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
810906 Oquaga-----	75	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Severe Low strength	1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
1147465 Alden, extremely stony-----	90	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Severe Low strength	1.00
1147467 Arnot, very rocky---	55	Poorly suited Rock fragments	0.75	Unsuited Rock fragments Slope	1.00 0.50	Severe Low strength	1.00
Lordstown, very rocky-----	40	Poorly suited Rock fragments	0.75	Unsuited Rock fragments Slope	1.00 0.50	Severe Low strength	1.00
1147468 Arnot-----	45	Poorly suited Rock fragments	0.75	Unsuited Rock fragments Slope	1.00 0.75	Severe Low strength	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6a.--Land Management, Part I (Planting)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1147468 Lordstown-----	40	Poorly suited Rock fragments	0.75	Unsuited Rock fragments Slope	1.00 0.75	Severe Low strength	1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
1147469 Arnot-----	60	Poorly suited Rock fragments Slope	0.75 0.50	Unsuited Slope Rock fragments	1.00 1.00	Severe Low strength	1.00
Lordstown-----	25	Poorly suited Rock fragments Slope	0.75 0.50	Unsuited Slope Rock fragments	1.00 1.00	Severe Low strength	1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
1147470 Atherton, very poorly drained----	60	Poorly suited Wetness	0.75	Poorly suited Wetness	0.75	Severe Low strength	1.00
Atherton, poorly drained-----	30	Well suited		Well suited		Severe Low strength	1.00
1147471 Catden-----	85	Well suited		Well suited		Severe Low strength	1.00
1147474 Chippewa, extremely stony-----	80	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Severe Low strength	1.00
1147475 Colonie-----	80	Well suited		Well suited		Moderate Low strength	0.50
1147478 Delaware, rarely flooded-----	80	Well suited		Moderately suited Slope	0.50	Moderate Low strength	0.50
1147482 Fredon, very stony--	50	Well suited		Moderately suited Rock fragments	0.50	Severe Low strength	1.00
Halsey, very stony--	40	Well suited		Moderately suited Rock fragments	0.50	Severe Low strength	1.00
1147485 Hazen, very stony---	60	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Severe Low strength	1.00
Hoosic, very stony--	35	Moderately suited Rock fragments	0.50	Moderately suited Rock fragments Slope	0.50 0.50	Moderate Low strength	0.50

Soil Survey of Delaware Water Gap National Recreation Area

Table 6a.--Land Management, Part I (Planting)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1147490							
Hoosic, very stony--	60	Moderately suited Rock fragments	0.50	Moderately suited Rock fragments Slope	0.50 0.50	Moderate Low strength	0.50
Hazen, very stony---	30	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Severe Low strength	1.00
1147491							
Hoosic, very stony--	50	Moderately suited Slope Rock fragments	0.50 0.50	Unsuited Slope Rock fragments	1.00 0.50	Moderate Low strength	0.50
Otisville, very stony-----	40	Moderately suited Sandiness Slope	0.50 0.50	Unsuited Slope Rock fragments Sandiness	1.00 0.50 0.50	Moderate Low strength	0.50
1147492							
Lackawanna, extremely stony----	85	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Severe Low strength	1.00
1147500							
Wurtsboro, extremely stony----	90	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Severe Low strength	1.00
1147501							
Wurtsboro, extremely stony----	60	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Severe Low strength	1.00
Swartswood, extremely stony----	40	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments	0.75	Severe Low strength	1.00
1147502							
Wurtsboro, extremely stony----	60	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Severe Low strength	1.00
Swartswood, extremely stony----	40	Moderately suited Rock fragments	0.50	Poorly suited Rock fragments Slope	0.75 0.50	Severe Low strength	1.00
1147527							
Udorthents-----	60	Well suited		Well suited		Severe Low strength	1.00
Urban land-----	40	Not rated		Not rated		Not rated	
1147532							
Udorthents-----	100	Well suited		Well suited		Severe Low strength	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6a.--Land Management, Part I (Planting)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1147533 Wurtsboro, extremely stony----	80	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Severe Low strength	1.00
Swartswood, extremely stony----	20	Moderately suited Rock fragments	0.50	Poorly suited Slope Rock fragments	0.75 0.75	Severe Low strength	1.00
1948749 Arnot-----	90	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Slight Strength	0.10
1948750 Arnot-----	90	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Slight Strength	0.10
1948751 Arnot-----	90	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Slight Strength	0.10
1948774 Conotton-----	90	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Moderate Low strength	0.50
1948775 Conotton-----	95	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Moderate Low strength	0.50
1948776 Conotton-----	95	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Moderate Low strength	0.50
1948777 Conotton-----	95	Moderately suited Slope	0.50	Unsuited Slope Rock fragments	1.00 0.50	Moderate Low strength	0.50
1948797 Manlius-----	90	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Slight Strength	0.10
1948802 Manlius-----	90	Well suited		Moderately suited Rock fragments Slope	0.50 0.50	Slight Strength	0.10
1948818 Manlius-----	90	Well suited		Poorly suited Slope Rock fragments	0.75 0.50	Slight Strength	0.10

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6a.--Land Management, Part I (Planting)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1948832 Penargyl-----	90	Well suited		Moderately suited Slope	0.50	Moderate Low strength	0.50
1948846 Phelps-----	90	Well suited		Moderately suited Slope Rock fragments	0.50 0.50	Moderate Low strength	0.50
1948855 Udorthents, loamy---	95	Well suited		Well suited		Severe Low strength	1.00
1948989 Urban land-----	65	Not rated		Not rated		Not rated	
Delaware-----	25	Well suited		Well suited		Moderate Low strength	0.50



# Soil Survey of Delaware Water Gap National Recreation Area

Table 6b.--Land Management, Part II (Hazard of Erosion and Suitability for Roads)

[Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
290836 Hoosic, very stony--	50	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Otisville, very stony-----	40	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness	1.00 0.50
296265 Alden-----	100	Slight		Slight		Poorly suited Low strength Ponding Wetness	1.00 1.00 1.00
296269 Fluents, (alluvial land)-----	70	Slight		Slight		Poorly suited Flooding Wetness	1.00 0.50
296271 Alvira-----	55	Slight		Moderate Slope/erodibility	0.50	Moderately suited Wetness Low strength Slope	0.50 0.50 0.50
Watson-----	35	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength Slope Wetness Stickiness; high plasticity index	0.50 0.50 0.50 0.50
296272 Bath-----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
296273 Bath-----	85	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope	0.50
296274 Bath-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
296275 Bath-----	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Rock fragments Slope	0.50 0.50
296276 Bath-----	90	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6b.--Land Management, Part II (Hazard of Erosion and Suitability for Roads)--Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296277 Benson-----	55	Slight		Slight		Moderately suited Low strength	0.50
296278 Benson-----	60	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Rock outcrop-----	20	Not rated		Not rated		Not rated	
296279 Benson-----	60	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
Rock outcrop-----	25	Not rated		Not rated		Not rated	
296280 Braceville-----	90	Slight		Slight		Moderately suited Low strength	0.50
296281 Braceville-----	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength Slope	0.50 0.50
296283 Buchanan-----	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Rock fragments Low strength	0.50 0.50
296288 Chippewa-----	48	Slight		Moderate Slope/erodibility	0.50	Poorly suited Wetness Low strength	1.00 0.50
Norwich-----	48	Slight		Moderate Slope/erodibility	0.50	Poorly suited Wetness Low strength	1.00 0.50
296289 Chippewa-----	47	Slight		Moderate Slope/erodibility	0.50	Poorly suited Wetness Rock fragments	1.00 0.50
Norwich-----	47	Slight		Moderate Slope/erodibility	0.50	Poorly suited Wetness Rock fragments Low strength	1.00 0.50 0.50
296295 Udorthents, cut and fill-----	90	Not rated		Not rated		Not rated	
296297 Dekalb-----	100	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope Rock fragments	1.00 0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6b.--Land Management, Part II (Hazard of Erosion and Suitability for Roads)--Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296298 Dekalb-----	100	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
296303 Hazleton-----	100	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope Rock fragments	1.00 0.50
296304 Holly-----	100	Slight		Slight		Poorly suited Flooding Wetness Low strength	1.00 1.00 0.50
296311 Lackawanna-----	40	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Low strength	1.00 0.50 0.50
Bath-----	30	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
296312 Lackawanna-----	80	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength Slope	0.50 0.50
296313 Lackawanna-----	80	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
296315 Lackawanna-----	80	Slight		Moderate Slope/erodibility	0.50	Moderately suited Rock fragments Low strength Slope	0.50 0.50 0.50
296316 Lackawanna-----	80	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Low strength	1.00 0.50 0.50
296317 Laidig-----	100	Slight		Moderate Slope/erodibility	0.50	Moderately suited Rock fragments Low strength	0.50 0.50
296326 Lordstown-----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Rock fragments Low strength Slope	0.50 0.50 0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6b.--Land Management, Part II (Hazard of Erosion and Suitability for Roads)--Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296327 Lordstown-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Low strength	1.00 0.50 0.50
296328 Lordstown-----	40	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Low strength	1.00 0.50 0.50
Oquaga-----	35	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
296329 Mardin-----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Wetness Slope	0.50 0.50
296330 Mardin-----	85	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Wetness	0.50 0.50
296331 Mardin-----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Wetness Low strength Slope	0.50 0.50 0.50
296332 Mardin-----	87	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Wetness Low strength	1.00 0.50 0.50
296335 Meckesville-----	100	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Low strength	0.50 0.50
296337 Meckesville-----	100	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength Stickiness; high plasticity index	1.00 0.50 0.50
296338 Morris-----	80	Slight		Moderate Slope/erodibility	0.50	Poorly suited Wetness Low strength Slope	1.00 0.50 0.50
296339 Morris-----	75	Slight		Moderate Slope/erodibility	0.50	Poorly suited Wetness Rock fragments Low strength	1.00 0.50 0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6b.--Land Management, Part II (Hazard of Erosion and Suitability for Roads)--Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296340 Morris-----	80	Slight		Severe Slope/erodibility	0.95	Poorly suited Wetness	1.00
						Slope	0.50
						Rock fragments	0.50
						Low strength	0.50
296341 Freetown, mucky peat	100	Slight		Slight		Poorly suited Ponding	1.00
						Wetness	1.00
296342 Paupack, mucky peat (shallow)-----	100	Slight		Slight		Poorly suited Ponding	1.00
						Wetness	1.00
296343 Oquaga-----	50	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
Lackawanna-----	35	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
						Stickiness; high plasticity index	0.50
296344 Oquaga-----	55	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope	0.50
Lackawanna-----	30	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope	0.50
						Stickiness; high plasticity index	0.50
296346 Oquaga-----	50	Slight		Slight		Moderately suited Rock fragments	0.50
Lackawanna-----	35	Slight		Moderate Slope/erodibility	0.50	Moderately suited Rock fragments	0.50
						Low strength	0.50
						Stickiness; high plasticity index	0.50
296347 Oquaga-----	60	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
						Rock fragments	0.50
Lackawanna-----	30	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
						Rock fragments	0.50
						Low strength	0.50
						Stickiness; high plasticity index	0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6b.--Land Management, Part II (Hazard of Erosion and Suitability for Roads)--Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296348 Philo-----	85	Slight		Slight		Poorly suited Flooding Low strength	1.00 0.50
296349 Pope-----	90	Slight		Slight		Poorly suited Flooding Low strength	1.00 0.50
296350 Pope-----	90	Slight		Slight		Moderately suited Low strength	0.50
296351 Rexford, somewhat poorly drained----	40	Slight		Slight		Poorly suited Wetness Low strength	1.00 0.50
Rexford, poorly drained-----	35	Slight		Slight		Poorly suited Wetness Low strength	1.00 0.50
296355 Sheffield-----	100	Slight		Slight		Poorly suited Ponding Wetness Low strength	1.00 1.00 0.50
296363 Dystrochrepts, very stony-----	85	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
296369 Wayland-----	100	Slight		Slight		Poorly suited Ponding Flooding Wetness Low strength	1.00 1.00 1.00 0.50
296376 Wellsboro-----	80	Slight		Moderate Slope/erodibility	0.50	Moderately suited Wetness Low strength Slope	0.50 0.50 0.50
296379 Wellsboro-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Wetness Rock fragments Low strength	1.00 0.50 0.50 0.50
296385 Wyoming-----	85	Slight		Slight		Well suited	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6b.--Land Management, Part II (Hazard of Erosion and Suitability for Roads)--Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296386 Wyoming-----	85	Slight		Slight		Moderately suited Slope	0.50
296387 Wyoming-----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
296388 Wyoming-----	85	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope	1.00
296389 Wyoming-----	100	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
296390 Water-----	100	Not rated		Not rated		Not rated	
297185 Edgemere-----	42	Slight		Moderate Slope/erodibility	0.50	Poorly suited Rock fragments Ponding Wetness Low strength Slope	1.00 1.00 1.00 0.50 0.50
Shohola-----	42	Slight		Moderate Slope/erodibility	0.50	Poorly suited Rock fragments Wetness Slope Low strength	1.00 0.50 0.50 0.50
297186 Edgemere-----	75	Slight		Slight		Poorly suited Rock fragments Ponding Wetness Low strength	1.00 1.00 1.00 0.50
297188 Manlius-----	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 1.00
Arnot-----	35	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Low strength	1.00 1.00 0.50
Rock outcrop-----	15	Not rated		Not rated		Not rated	
297189 Manlius-----	40	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 1.00



# Soil Survey of Delaware Water Gap National Recreation Area

Table 6b.--Land Management, Part II (Hazard of Erosion and Suitability for Roads)--Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
297189 Arnot-----	35	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Low strength	1.00 1.00 0.50
Rock outcrop-----	15	Not rated		Not rated		Not rated	
297190 Braceville-----	82	Slight		Slight		Moderately suited Wetness	0.50
297191 Wyalusing-----	85	Slight		Slight		Poorly suited Flooding Wetness Low strength	1.00 1.00 0.50
297192 Pope-----	95	Slight		Slight		Poorly suited Flooding	1.00
297193 Paupack-----	90	Slight		Slight		Poorly suited Ponding Wetness	1.00 1.00
297196 Freetown-----	94	Slight		Slight		Poorly suited Ponding Wetness	1.00 1.00
297197 Manlius-----	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Rock fragments Slope	0.50 0.50
297198 Manlius-----	86	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Rock fragments	0.50 0.50
297201 Oquaga-----	75	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope Rock fragments	1.00 1.00
297203 Delaware-----	93	Slight		Slight		Moderately suited Low strength	0.50
297204 Delaware-----	82	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
297205 Delaware-----	80	Slight		Severe Slope/erodibility	0.95	Poorly suited Slope	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6b.--Land Management, Part II (Hazard of Erosion and Suitability for Roads)--Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
297209 Philo-----	85	Slight		Slight		Poorly suited Flooding Low strength	1.00 0.50
297210 Barbour-----	85	Slight		Slight		Poorly suited Flooding Low strength	1.00 0.50
297216 Wurtsboro-----	92	Slight		Moderate Slope/erodibility	0.50	Moderately suited Rock fragments Wetness	0.50 0.50
297217 Wurtsboro-----	88	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Rock fragments Wetness	0.50 0.50 0.50
297227 Arnot-----	88	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
297228 Arnot-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
297229 Wyoming-----	90	Slight		Slight		Well suited	
297230 Wyoming-----	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
297231 Wyoming-----	90	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Poorly suited Slope	1.00
297236 Suncook-----	91	Slight		Slight		Poorly suited Flooding	1.00
297237 Mardin-----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Wetness	0.50
297238 Mardin-----	85	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Wetness	0.50 0.50
297239 Mardin-----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Wetness Rock fragments	0.50 0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6b.--Land Management, Part II (Hazard of Erosion and Suitability for Roads)--Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
297240 Mardin-----	85	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Wetness Rock fragments	0.50 0.50 0.50
297241 Unadilla-----	90	Slight		Slight		Moderately suited Low strength	0.50
297242 Shohola-----	62	Slight		Slight		Poorly suited Rock fragments Wetness Low strength	1.00 0.50 0.50
Edgemere-----	29	Slight		Slight		Poorly suited Ponding Wetness Rock fragments Low strength	1.00 1.00 0.50 0.50
297243 Shohola-----	62	Slight		Moderate Slope/erodibility	0.50	Poorly suited Rock fragments Slope Wetness Low strength	1.00 0.50 0.50 0.50
Edgemere-----	29	Slight		Moderate Slope/erodibility	0.50	Poorly suited Ponding Wetness Slope Rock fragments Low strength	1.00 1.00 0.50 0.50 0.50
297244 Lordstown-----	40	Slight		Slight		Moderately suited Rock fragments Low strength	0.50 0.50
Swartswood-----	35	Slight		Slight		Moderately suited Rock fragments	0.50
297247 Chenango-----	86	Slight		Slight		Well suited	
297248 Chenango-----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
297249 Chenango-----	90	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
297253 Craigs ville-----	50	Slight		Slight		Poorly suited Flooding Rock fragments	1.00 0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6b.--Land Management, Part II (Hazard of Erosion and Suitability for Roads)--Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
297253 Wyoming-----	40	Slight		Slight		Moderately suited Rock fragments	0.50
297254 Pits, shale-----	40	Not rated		Not rated		Not rated	
Pits, gravel-----	40	Not rated		Not rated		Not rated	
298049 Wurtsboro, extremely stony----	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Rock fragments Wetness	0.50 0.50
298050 Wurtsboro, extremely stony----	60	Slight		Moderate Slope/erodibility	0.50	Moderately suited Rock fragments Wetness	0.50 0.50
Swartswood, extremely stony----	40	Slight		Slight		Moderately suited Rock fragments	0.50
298051 Wurtsboro, extremely stony----	60	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Rock fragments Wetness	0.50 0.50 0.50
Swartswood, extremely stony----	40	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Rock fragments	0.50 0.50
298075 Colonie-----	80	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
298188 Lackawanna, extremely stony----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Low strength	1.00 0.50 0.50
298189 Lackawanna, extremely stony----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Rock fragments Low strength	0.50 0.50 0.50
298221 Swartswood, extremely stony----	90	Slight		Slight		Moderately suited Rock fragments	0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6b.--Land Management, Part II (Hazard of Erosion and Suitability for Roads)--Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
298222 Swartswood, extremely stony----	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Rock fragments	0.50 0.50
298223 Swartswood, extremely stony----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
298255 Delaware, rarely flooded-----	80	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
298256 Delaware, rarely flooded-----	80	Slight		Slight		Well suited	
298257 Wallpack-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
298258 Wallpack-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
298259 Wallpack, extremely stony-----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Rock fragments Low strength	0.50 0.50
298260 Wallpack, extremely stony-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Moderately suited Slope Rock fragments Low strength	0.50 0.50 0.50
298261 Wallpack-----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
298262 Wallpack, extremely stony-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Low strength	1.00 0.50 0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6b.--Land Management, Part II (Hazard of Erosion and Suitability for Roads)--Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
298265 Venango, extremely stony-----	90	Slight		Moderate Slope/erodibility	0.50	Poorly suited Wetness Rock fragments Low strength	1.00 0.50 0.50
298266 Venango, extremely stony-----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Wetness Slope Rock fragments Low strength	1.00 0.50 0.50 0.50
298409 Swartswood, extremely stony----	90	Slight		Slight		Moderately suited Rock fragments	0.50
298411 Swartswood, extremely stony----	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Rock fragments	0.50 0.50
298413 Swartswood, extremely stony----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
318498 Hazen, very stony---	60	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength Slope	0.50 0.50
Hoosic, very stony--	35	Slight		Slight		Moderately suited Slope	0.50
318533 Hazen, very stony---	50	Slight		Slight		Moderately suited Low strength	0.50
Hoosic, very stony--	40	Slight		Slight		Well suited	
319783 Catden-----	85	Slight		Slight		Poorly suited Low strength Ponding Wetness	1.00 1.00 1.00
319784 Fredon, very stony--	50	Slight		Slight		Moderately suited Wetness Low strength	0.50 0.50
Halsey, very stony--	40	Slight		Slight		Poorly suited Ponding Low strength	1.00 0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6b.--Land Management, Part II (Hazard of Erosion and Suitability for Roads)--Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
543222 Andover, extremely stony-----	55	Slight		Slight		Poorly suited Wetness	1.00
						Rock fragments	0.50
						Low strength	0.50
Buchanan, extremely stony-----	40	Slight		Moderate Slope/erodibility	0.50	Moderately suited Rock fragments	0.50
						Wetness	0.50
543243 Berks-----	65	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Weikert-----	25	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
543246 Buchanan-----	75	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
						Wetness	0.50
543247 Buchanan, extremely stony-----	80	Slight		Moderate Slope/erodibility	0.50	Moderately suited Rock fragments	0.50
						Wetness	0.50
543257 Chippewa-----	90	Slight		Slight		Poorly suited Wetness	1.00
						Low strength	0.50
543258 Chippewa-----	90	Slight		Moderate Slope/erodibility	0.50	Poorly suited Wetness	1.00
						Low strength	0.50
543259 Chippewa, extremely stony-----	90	Slight		Slight		Poorly suited Wetness	1.00
						Rock fragments	0.50
543271 Delaware-----	90	Slight		Slight		Well suited	
543276 Fluvaquents-----	85	Slight		Slight		Poorly suited Flooding	1.00
						Wetness	1.00
543292 Hazleton, extremely stony-----	90	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
						Rock fragments	0.50



# Soil Survey of Delaware Water Gap National Recreation Area

Table 6b.--Land Management, Part II (Hazard of Erosion and Suitability for Roads)--Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
543293 Hazleton, extremely stony-----	90	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
543299 Laidig, extremely stony-----	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Rock fragments Low strength	0.50 0.50
543300 Laidig, extremely stony-----	90	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Low strength	1.00 0.50 0.50
543304 Laidig-----	50	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Low strength	1.00 0.50 0.50
Rubble land-----	40	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness	1.00 0.50
543318 Rubble land-----	75	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness	1.00 0.50
543327 Swartswood-----	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
543328 Swartswood-----	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
543330 Swartswood, extremely stony----	50	Slight		Slight		Moderately suited Rock fragments	0.50
Wurtsboro, extremely stony----	30	Slight		Moderate Slope/erodibility	0.50	Moderately suited Rock fragments Stickiness; high plasticity index	0.50 0.50
543331 Swartswood, extremely stony----	50	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6b.--Land Management, Part II (Hazard of Erosion and Suitability for Roads)--Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
543331 Wurtsboro, extremely stony----	30	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Stickiness; high plasticity index	1.00 0.50 0.50
543359 Volusia-----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Wetness Low strength	0.50 0.50
543360 Volusia, extremely stony-----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Wetness Rock fragments Low strength	0.50 0.50 0.50
543374 Wurtsboro-----	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
543375 Wurtsboro-----	90	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope	0.50
612280 Scio-----	80	Slight		Slight		Moderately suited Low strength Wetness	0.50 0.50
612666 Colonie-----	80	Slight		Slight		Well suited	
612668 Hoosic, very stony--	60	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
Hazen, very stony---	30	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Low strength	0.50 0.50
612724 Lordstown, very rocky-----	50	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
Wallpack, very rocky	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Low strength	1.00 0.50 0.50
612732 Atherton, very poorly drained----	60	Slight		Slight		Poorly suited Low strength Ponding	1.00 1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6b.--Land Management, Part II (Hazard of Erosion and Suitability for Roads)--Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
612732 Atherton, poorly drained-----	30	Slight		Slight		Poorly suited Wetness Low strength	1.00 0.50
612738 Fluvaquents, occasionally flooded-----	90	Slight		Slight		Poorly suited Flooding Wetness Low strength	1.00 1.00 0.50
612753 Wallpack, aeolian mantle, very stony-	85	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope	0.50
612756 Wallpack, aeolian mantle, very stony-	85	Slight		Moderate Slope/erodibility	0.50	Well suited	
612757 Wallpack, aeolian mantle, very stony-	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
612767 Wellsboro, extremely stony----	85	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Moderately suited Slope Rock fragments Low strength	0.50 0.50 0.50
612768 Wellsboro, extremely stony----	85	Slight		Slight		Moderately suited Rock fragments Low strength	0.50 0.50
613393 Alden, extremely stony-----	90	Slight		Slight		Poorly suited Ponding Rock fragments Low strength	1.00 0.50 0.50
613447 Unadilla-----	85	Slight		Slight		Moderately suited Low strength	0.50
613448 Unadilla-----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength Slope	0.50 0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6b.--Land Management, Part II (Hazard of Erosion and Suitability for Roads)--Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
614075 Wurtsboro, extremely stony----	80	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Wetness	1.00 0.50 0.50
Swartswood, extremely stony----	20	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
620179 Arnot, very rocky---	55	Slight		Moderate Slope/erodibility	0.50	Poorly suited Rock fragments Slope	1.00 0.50
Lordstown, very rocky-----	40	Slight		Moderate Slope/erodibility	0.50	Poorly suited Rock fragments Slope	1.00 0.50
620180 Arnot-----	45	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 1.00
Lordstown-----	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
620181 Arnot-----	60	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 1.00
Lordstown-----	25	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
623089 Chippewa, extremely stony-----	80	Slight		Slight		Poorly suited Ponding Rock fragments Low strength	1.00 0.50 0.50
623109 Farmington-----	50	Slight		Moderate Slope/erodibility	0.50	Poorly suited Rock fragments Slope Low strength	1.00 0.50 0.50
Rock outcrop-----	40	Not rated		Not rated		Not rated	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6b.--Land Management, Part II (Hazard of Erosion and Suitability for Roads)--Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
624811 Galway, very rocky--	80	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 1.00
624813 Lackawanna, extremely stony----	85	Slight		Slight		Moderately suited Rock fragments Low strength	0.50 0.50
624816 Lordstown, very rocky-----	50	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Moderately suited Slope Rock fragments	0.50 0.50
Wallpack, very rocky	35	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Moderately suited Slope Rock fragments Low strength	0.50 0.50 0.50
624822 Lordstown-----	50	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Wallpack-----	35	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Low strength	1.00 0.50
624823 Lordstown-----	50	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Moderately suited Slope	0.50
Wallpack-----	35	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Moderately suited Slope Low strength	0.50 0.50
624824 Lordstown-----	50	Slight		Moderate Slope/erodibility	0.50	Well suited	
Wallpack-----	35	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
624826 Manlius, very rocky-	60	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
Nassau, very rocky--	25	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
624827 Nassau, very rocky--	55	Slight		Slight		Moderately suited Rock fragments Low strength	0.50 0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6b.--Land Management, Part II (Hazard of Erosion and Suitability for Roads)--Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
624827 Manlius, very rocky-	44	Slight		Slight		Moderately suited Rock fragments Low strength	0.50 0.50
624828 Nassau, very rocky--	55	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Rock fragments Low strength	0.50 0.50 0.50
Manlius, very rocky-	44	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Rock fragments Low strength	0.50 0.50 0.50
624829 Nassau, very rocky--	55	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Low strength	1.00 0.50 0.50
Manlius, very rocky-	44	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Low strength	1.00 0.50 0.50
624832 Nassau-----	50	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
Rock outcrop-----	45	Not rated		Not rated		Not rated	
624841 Oquaga-----	60	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
Rock outcrop-----	25	Not rated		Not rated		Not rated	
624845 Rock outcrop-----	45	Not rated		Not rated		Not rated	
Farmington-----	35	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Low strength	1.00 0.50 0.50
Galway-----	20	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
624846 Rock outcrop-----	40	Not rated		Not rated		Not rated	
Arnot-----	30	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6b.--Land Management, Part II (Hazard of Erosion and Suitability for Roads)--Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
624846 Rubble land-----	20	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Sandiness Stickiness; high plasticity index	1.00 1.00 0.50 0.50
626816 Udifluvents, occasionally flooded-----	90	Slight		Slight		Poorly suited Flooding	1.00
635458 Oquaga, very rocky--	55	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Rock fragments	0.50 0.50
Lackawanna, very rocky-----	30	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Rock fragments Low strength	0.50 0.50 0.50
635459 Oquaga, very rocky--	50	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
Lackawanna, very rocky-----	35	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Low strength	1.00 0.50 0.50
740953 Delaware, rarely flooded-----	80	Slight		Slight		Well suited	
740968 Nassau, very rocky--	55	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Rock fragments Low strength	0.50 0.50 0.50
Manlius, very rocky-	44	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Rock fragments Low strength	0.50 0.50 0.50
740969 Nassau, very rocky--	55	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Low strength	1.00 0.50 0.50
Manlius, very rocky-	44	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Low strength	1.00 0.50 0.50



# Soil Survey of Delaware Water Gap National Recreation Area

Table 6b.--Land Management, Part II (Hazard of Erosion and Suitability for Roads)--Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
740971 Oquaga, very rocky--	55	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Rock fragments	0.50 0.50
Lackawanna, very rocky-----	30	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Rock fragments Low strength	0.50 0.50 0.50
740972 Oquaga, very rocky--	50	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
Lackawanna, very rocky-----	35	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Low strength	1.00 0.50 0.50
740974 Oquaga-----	60	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
Rock outcrop-----	25	Not rated		Not rated		Not rated	
740975 Rock outcrop-----	40	Not rated		Not rated		Not rated	
Arnot-----	30	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 1.00
Rubble land-----	20	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Sandiness Stickiness; high plasticity index	1.00 1.00 0.50 0.50
740987 Scio-----	80	Slight		Slight		Moderately suited Low strength Wetness	0.50 0.50
740988 Udifluvents, occasionally flooded-----	90	Slight		Slight		Poorly suited Flooding	1.00
740991 Unadilla-----	85	Slight		Slight		Moderately suited Low strength	0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6b.--Land Management, Part II (Hazard of Erosion and Suitability for Roads)--Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
740992 Unadilla-----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength Slope	0.50 0.50
740995 Wellsboro, extremely stony----	85	Slight		Slight		Moderately suited Rock fragments Low strength	0.50 0.50
740996 Wellsboro, extremely stony----	85	Moderate Slope/erodibility	0.50	Moderate Slope/erodibility	0.50	Moderately suited Slope Rock fragments Low strength	0.50 0.50 0.50
741149 Lackawanna, extremely stony----	85	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Rock fragments Low strength	0.50 0.50 0.50
741150 Lackawanna, extremely stony----	85	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Low strength	1.00 0.50 0.50
801114 Oquaga-----	75	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Rock fragments	0.50 0.50
Rock outcrop-----	15	Not rated		Not rated		Not rated	
810906 Oquaga-----	75	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Rock fragments	0.50 0.50
Rock outcrop-----	15	Not rated		Not rated		Not rated	
1147465 Alden, extremely stony-----	90	Slight		Slight		Poorly suited Ponding Rock fragments Low strength	1.00 0.50 0.50
1147467 Arnot, very rocky---	55	Slight		Moderate Slope/erodibility	0.50	Poorly suited Rock fragments Slope	1.00 0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6b.--Land Management, Part II (Hazard of Erosion and Suitability for Roads)--Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1147467 Lordstown, very rocky-----	40	Slight		Moderate Slope/erodibility	0.50	Poorly suited Rock fragments Slope	1.00 0.50
1147468 Arnot-----	45	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 1.00
Lordstown-----	40	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
1147469 Arnot-----	60	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 1.00
Lordstown-----	25	Very severe Slope/erodibility	0.95	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
1147470 Atherton, very poorly drained----	60	Slight		Slight		Poorly suited Low strength Ponding	1.00 1.00
Atherton, poorly drained-----	30	Slight		Slight		Poorly suited Wetness Low strength	1.00 0.50
1147471 Catden-----	85	Slight		Slight		Poorly suited Low strength Ponding Wetness	1.00 1.00 1.00
1147474 Chippewa, extremely stony-----	80	Slight		Slight		Poorly suited Ponding Rock fragments Low strength	1.00 0.50 0.50
1147475 Colonie-----	80	Slight		Slight		Well suited	
1147478 Delaware, rarely flooded-----	80	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6b.--Land Management, Part II (Hazard of Erosion and Suitability for Roads)--Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1147482 Fredon, very stony--	50	Slight		Slight		Moderately suited Wetness Low strength	0.50 0.50
Halsey, very stony--	40	Slight		Slight		Poorly suited Ponding Low strength	1.00 0.50
1147485 Hazen, very stony---	60	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength Slope	0.50 0.50
Hoosic, very stony--	35	Slight		Slight		Moderately suited Slope	0.50
1147490 Hoosic, very stony--	60	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
Hazen, very stony---	30	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Low strength	0.50 0.50
1147491 Hoosic, very stony--	50	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
Otisville, very stony-----	40	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope Sandiness	1.00 0.50
1147492 Lackawanna, extremely stony----	85	Slight		Slight		Moderately suited Rock fragments Low strength	0.50 0.50
1147500 Wurtsboro, extremely stony----	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Rock fragments Wetness	0.50 0.50
1147501 Wurtsboro, extremely stony----	60	Slight		Moderate Slope/erodibility	0.50	Moderately suited Rock fragments Wetness	0.50 0.50
Swartswood, extremely stony----	40	Slight		Slight		Moderately suited Rock fragments	0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6b.--Land Management, Part II (Hazard of Erosion and Suitability for Roads)--Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1147502 Wurtsboro, extremely stony----	60	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope Rock fragments Wetness	0.50 0.50 0.50
Swartswood, extremely stony----	40	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope Rock fragments	0.50 0.50
1147527 Udorthents-----	60	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
Urban land-----	40	Not rated		Not rated		Not rated	
1147532 Udorthents-----	100	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength	0.50
1147533 Wurtsboro, extremely stony----	80	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments Wetness	1.00 0.50 0.50
Swartswood, extremely stony----	20	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope Rock fragments	1.00 0.50
1948749 Arnot-----	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
1948750 Arnot-----	90	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope	0.50
1948751 Arnot-----	90	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
1948774 Conotton-----	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
1948775 Conotton-----	95	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope	0.50
1948776 Conotton-----	95	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
1948777 Conotton-----	95	Severe Slope/erodibility	0.75	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6b.--Land Management, Part II (Hazard of Erosion and Suitability for Roads)--Continued

Map unit symbol and soil name	Pct. of map unit	Hazard of erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1948797 Manlius-----	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
1948802 Manlius-----	90	Slight		Severe Slope/erodibility	0.95	Moderately suited Slope	0.50
1948818 Manlius-----	90	Moderate Slope/erodibility	0.50	Severe Slope/erodibility	0.95	Poorly suited Slope	1.00
1948832 Penargyl-----	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Slope	0.50
1948846 Phelps-----	90	Slight		Moderate Slope/erodibility	0.50	Moderately suited Wetness	0.50
1948855 Udorthents, loamy---	95	Slight		Moderate Slope/erodibility	0.50	Moderately suited Low strength Wetness	0.50 0.50
1948989 Urban land-----	65	Not rated		Not rated		Not rated	
Delaware-----	25	Slight		Moderate Slope/erodibility	0.50	Well suited	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6C.--Land Management, Part III (Site Preparation)

[Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
290836 Hoosic, very stony--	50	Unsuited Slope	1.00	Unsuited Slope Rock fragments	1.00 0.50
Otisville, very stony-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00
296265 Alden-----	100	Well suited		Well suited	
296269 Fluents, (alluvial land)-----	70	Well suited		Well suited	
296271 Alvira-----	55	Well suited		Well suited	
Watson-----	35	Well suited		Well suited	
296272 Bath-----	85	Well suited		Well suited	
296273 Bath-----	85	Well suited		Well suited	
296274 Bath-----	85	Poorly suited Slope	0.50	Poorly suited Slope	0.50
296275 Bath-----	90	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
296276 Bath-----	90	Poorly suited Rock fragments Slope	0.50 0.50	Poorly suited Rock fragments Slope	0.50 0.50
296277 Benson-----	55	Unsuited Restrictive layer	1.00	Poorly suited Rock fragments	0.50
296278 Benson-----	60	Unsuited Restrictive layer Slope	1.00 0.50	Poorly suited Slope Rock fragments	0.50 0.50
Rock outcrop-----	20	Not rated		Not rated	



# Soil Survey of Delaware Water Gap National Recreation Area

Table 6c.--Land Management, Part III (Site Preparation)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
296279 Benson-----	60	Unsuited Restrictive layer Slope	1.00 1.00	Unsuited Slope Rock fragments	1.00 0.50
Rock outcrop-----	25	Not rated		Not rated	
296280 Braceville-----	90	Well suited		Well suited	
296281 Braceville-----	90	Well suited		Well suited	
296283 Buchanan-----	90	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
296288 Chippewa-----	48	Well suited		Well suited	
Norwich-----	48	Well suited		Well suited	
296289 Chippewa-----	47	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
Norwich-----	47	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
296295 Udorthents, cut and fill-----	90	Not rated		Not rated	
296297 Dekalb-----	100	Unsuited Restrictive layer Rock fragments Slope	1.00 0.50 0.50	Poorly suited Rock fragments Slope	0.50 0.50
296298 Dekalb-----	100	Unsuited Restrictive layer Slope Rock fragments	1.00 1.00 0.50	Unsuited Slope Rock fragments	1.00 0.50
296303 Hazleton-----	100	Poorly suited Rock fragments Slope	0.50 0.50	Poorly suited Rock fragments Slope	0.50 0.50
296304 Holly-----	100	Well suited		Well suited	
296311 Lackawanna-----	40	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Rock fragments	1.00 0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6c.--Land Management, Part III (Site Preparation)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
296311 Bath-----	30	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Rock fragments	1.00 0.50
296312 Lackawanna-----	80	Well suited		Well suited	
296313 Lackawanna-----	80	Well suited		Well suited	
296315 Lackawanna-----	80	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
296316 Lackawanna-----	80	Poorly suited Rock fragments Slope	0.50 0.50	Poorly suited Rock fragments Slope	0.50 0.50
296317 Laidig-----	100	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
296326 Lordstown-----	85	Unsuited Restrictive layer Rock fragments	1.00 0.50	Poorly suited Rock fragments	0.50
296327 Lordstown-----	85	Unsuited Restrictive layer Rock fragments Slope	1.00 0.50 0.50	Poorly suited Rock fragments Slope	0.50 0.50
296328 Lordstown-----	40	Unsuited Restrictive layer Slope Rock fragments	1.00 1.00 0.50	Unsuited Slope Rock fragments	1.00 0.50
Oquaga-----	35	Unsuited Restrictive layer Slope Rock fragments	1.00 1.00 0.50	Unsuited Slope Rock fragments	1.00 0.50
296329 Mardin-----	85	Well suited		Well suited	
296330 Mardin-----	85	Well suited		Well suited	
296331 Mardin-----	85	Well suited		Well suited	
296332 Mardin-----	87	Poorly suited Slope	0.50	Poorly suited Slope	0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6c.--Land Management, Part III (Site Preparation)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
296335 Meckesville-----	100	Well suited		Well suited	
296337 Meckesville-----	100	Poorly suited Slope	0.50	Poorly suited Slope	0.50
296338 Morris-----	80	Well suited		Well suited	
296339 Morris-----	75	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
296340 Morris-----	80	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
296341 Freetown, mucky peat	100	Unsuited Wetness	1.00	Poorly suited Wetness	0.75
296342 Paupack, mucky peat (shallow)-----	100	Unsuited Wetness	1.00	Poorly suited Wetness	0.75
296343 Oquaga-----	50	Unsuited Restrictive layer	1.00	Well suited	
Lackawanna-----	35	Well suited		Well suited	
296344 Oquaga-----	55	Unsuited Restrictive layer	1.00	Well suited	
Lackawanna-----	30	Well suited		Well suited	
296346 Oquaga-----	50	Unsuited Restrictive layer Rock fragments	1.00 0.50	Poorly suited Rock fragments	0.50
Lackawanna-----	35	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
296347 Oquaga-----	60	Unsuited Restrictive layer Rock fragments Slope	1.00 0.50 0.50	Poorly suited Rock fragments Slope	0.50 0.50
Lackawanna-----	30	Poorly suited Rock fragments Slope	0.50 0.50	Poorly suited Rock fragments Slope	0.50 0.50
296348 Philo-----	85	Well suited		Well suited	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6c.--Land Management, Part III (Site Preparation)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
296349 Pope-----	90	Well suited		Well suited	
296350 Pope-----	90	Well suited		Well suited	
296351 Rexford, somewhat poorly drained----	40	Well suited		Well suited	
Rexford, poorly drained-----	35	Well suited		Well suited	
296355 Sheffield-----	100	Well suited		Well suited	
296363 Dystrochrepts, very stony-----	85	Unsuited Slope	1.00	Unsuited Slope	1.00
296369 Wayland-----	100	Well suited		Well suited	
296376 Wellsboro-----	80	Well suited		Well suited	
296379 Wellsboro-----	85	Poorly suited Rock fragments Slope	0.50 0.50	Poorly suited Rock fragments Slope	0.50 0.50
296385 Wyoming-----	85	Well suited		Well suited	
296386 Wyoming-----	85	Well suited		Well suited	
296387 Wyoming-----	85	Well suited		Well suited	
296388 Wyoming-----	85	Poorly suited Slope	0.50	Poorly suited Slope	0.50
296389 Wyoming-----	100	Unsuited Slope	1.00	Unsuited Slope	1.00
296390 Water-----	100	Not rated		Not rated	
297185 Edgemere-----	42	Unsuited Rock fragments	1.00	Unsuited Rock fragments	1.00
Shohola-----	42	Unsuited Rock fragments	1.00	Unsuited Rock fragments	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6c.--Land Management, Part III (Site Preparation)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
297186 Edgemere-----	75	Unsuited Rock fragments	1.00	Unsuited Rock fragments	1.00
297188 Manlius-----	40	Unsuited Restrictive layer Rock fragments Slope	1.00 1.00 0.50	Unsuited Rock fragments Slope	1.00 0.50
Arnot-----	35	Unsuited Restrictive layer Rock fragments Slope	1.00 1.00 0.50	Unsuited Rock fragments Slope	1.00 0.50
Rock outcrop-----	15	Not rated		Not rated	
297189 Manlius-----	40	Unsuited Restrictive layer Slope Rock fragments	1.00 1.00 1.00	Unsuited Slope Rock fragments	1.00 1.00
Arnot-----	35	Unsuited Restrictive layer Slope Rock fragments	1.00 1.00 1.00	Unsuited Slope Rock fragments	1.00 1.00
Rock outcrop-----	15	Not rated		Not rated	
297190 Braceville-----	82	Well suited		Well suited	
297191 Wyalusing-----	85	Well suited		Well suited	
297192 Pope-----	95	Well suited		Well suited	
297193 Paupack-----	90	Unsuited Wetness	1.00	Poorly suited Wetness	0.75
297196 Freetown-----	94	Unsuited Wetness	1.00	Poorly suited Wetness	0.75
297197 Manlius-----	90	Unsuited Restrictive layer	1.00	Poorly suited Rock fragments	0.50
297198 Manlius-----	86	Unsuited Restrictive layer	1.00	Poorly suited Rock fragments	0.50
297201 Oquaga-----	75	Unsuited Restrictive layer Slope Rock fragments	1.00 0.50 0.50	Unsuited Rock fragments Slope	1.00 0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6c.--Land Management, Part III (Site Preparation)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
297203 Delaware-----	93	Well suited		Well suited	
297204 Delaware-----	82	Well suited		Well suited	
297205 Delaware-----	80	Well suited		Well suited	
297209 Philo-----	85	Well suited		Well suited	
297210 Barbour-----	85	Well suited		Well suited	
297216 Wurtsboro-----	92	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
297217 Wurtsboro-----	88	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
297227 Arnot-----	88	Unsuited Restrictive layer	1.00	Poorly suited Rock fragments	0.50
297228 Arnot-----	85	Unsuited Restrictive layer Slope	1.00 0.50	Poorly suited Slope Rock fragments	0.50 0.50
297229 Wyoming-----	90	Well suited		Well suited	
297230 Wyoming-----	90	Well suited		Well suited	
297231 Wyoming-----	90	Poorly suited Slope	0.50	Poorly suited Slope	0.50
297236 Suncook-----	91	Well suited		Well suited	
297237 Mardin-----	85	Well suited		Well suited	
297238 Mardin-----	85	Well suited		Well suited	
297239 Mardin-----	85	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
297240 Mardin-----	85	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6c.--Land Management, Part III (Site Preparation)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
297241 Unadilla-----	90	Well suited		Well suited	
297242 Shohola-----	62	Unsuited Rock fragments	1.00	Unsuited Rock fragments	1.00
Edgemere-----	29	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
297243 Shohola-----	62	Unsuited Rock fragments	1.00	Unsuited Rock fragments	1.00
Edgemere-----	29	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
297244 Lordstown-----	40	Unsuited Restrictive layer Rock fragments	1.00 0.50	Poorly suited Rock fragments	0.50
Swartswood-----	35	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
297247 Chenango-----	86	Well suited		Well suited	
297248 Chenango-----	85	Well suited		Well suited	
297249 Chenango-----	90	Poorly suited Slope	0.50	Poorly suited Slope	0.50
297253 Craigsville-----	50	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
Wyoming-----	40	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
297254 Pits, shale-----	40	Not rated		Not rated	
Pits, gravel-----	40	Not rated		Not rated	
298049 Wurtsboro, extremely stony----	90	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
298050 Wurtsboro, extremely stony----	60	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50



# Soil Survey of Delaware Water Gap National Recreation Area

Table 6c.--Land Management, Part III (Site Preparation)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
298050 Swartswood, extremely stony----	40	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
298051 Wurtsboro, extremely stony----	60	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
Swartswood, extremely stony----	40	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
298075 Colonie-----	80	Well suited		Well suited	
298188 Lackawanna, extremely stony----	85	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
298189 Lackawanna, extremely stony----	85	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
298221 Swartswood, extremely stony----	90	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
298222 Swartswood, extremely stony----	90	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
298223 Swartswood, extremely stony----	85	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
298255 Delaware, rarely flooded-----	80	Well suited		Well suited	
298256 Delaware, rarely flooded-----	80	Well suited		Well suited	
298257 Wallpack-----	85	Well suited		Well suited	
298258 Wallpack-----	85	Poorly suited Slope	0.50	Poorly suited Slope	0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6c.--Land Management, Part III (Site Preparation)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
298259 Wallpack, extremely stony-----	85	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
298260 Wallpack, extremely stony-----	85	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
298261 Wallpack-----	85	Well suited		Well suited	
298262 Wallpack, extremely stony-----	85	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
298265 Venango, extremely stony-----	90	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
298266 Venango, extremely stony-----	85	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
298409 Swartswood, extremely stony----	90	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
298411 Swartswood, extremely stony----	90	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
298413 Swartswood, extremely stony----	85	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
318498 Hazen, very stony---	60	Poorly suited Rock fragments	0.50	Well suited	
Hoosic, very stony--	35	Well suited		Poorly suited Rock fragments	0.50
318533 Hazen, very stony---	50	Poorly suited Rock fragments	0.50	Well suited	
Hoosic, very stony--	40	Well suited		Poorly suited Rock fragments	0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6c.--Land Management, Part III (Site Preparation)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
319783 Catden-----	85	Well suited		Well suited	
319784 Fredon, very stony--	50	Well suited		Well suited	
Halsey, very stony--	40	Well suited		Well suited	
543222 Andover, extremely stony-----	55	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
Buchanan, extremely stony-----	40	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
543243 Berks-----	65	Unsuited Restrictive layer Slope	1.00 1.00	Unsuited Slope	1.00
Weikert-----	25	Unsuited Restrictive layer Slope	1.00 1.00	Unsuited Slope	1.00
543246 Buchanan-----	75	Well suited		Well suited	
543247 Buchanan, extremely stony-----	80	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
543257 Chippewa-----	90	Well suited		Well suited	
543258 Chippewa-----	90	Well suited		Well suited	
543259 Chippewa, extremely stony-----	90	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
543271 Delaware-----	90	Well suited		Well suited	
543276 Fluvaquents-----	85	Well suited		Well suited	
543292 Hazleton, extremely stony-----	90	Poorly suited Rock fragments Slope	0.50 0.50	Poorly suited Rock fragments Slope	0.50 0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6c.--Land Management, Part III (Site Preparation)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
543293 Hazleton, extremely stony-----	90	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Rock fragments	1.00 0.50
543299 Laidig, extremely stony-----	90	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
543300 Laidig, extremely stony-----	90	Poorly suited Rock fragments Slope	0.50 0.50	Poorly suited Rock fragments Slope	0.50 0.50
543304 Laidig-----	50	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Rock fragments	1.00 0.50
Rubble land-----	40	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Rock fragments	1.00 0.50
543318 Rubble land-----	75	Unsuited Slope Rock fragments	1.00 0.50	Unsuited Slope Rock fragments	1.00 0.50
543327 Swartswood-----	90	Well suited		Well suited	
543328 Swartswood-----	90	Well suited		Well suited	
543330 Swartswood, extremely stony----	50	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
Wurtsboro, extremely stony----	30	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
543331 Swartswood, extremely stony----	50	Poorly suited Rock fragments Slope	0.50 0.50	Poorly suited Rock fragments Slope	0.50 0.50
Wurtsboro, extremely stony----	30	Poorly suited Rock fragments Slope	0.50 0.50	Poorly suited Rock fragments Slope	0.50 0.50
543359 Volusia-----	85	Well suited		Well suited	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6c.--Land Management, Part III (Site Preparation)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
543360 Volusia, extremely stony-----	85	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
543374 Wurtsboro-----	90	Well suited		Well suited	
543375 Wurtsboro-----	90	Well suited		Well suited	
612280 Scio-----	80	Well suited		Well suited	
612666 Colonie-----	80	Well suited		Well suited	
612668 Hoosic, very stony--	60	Well suited		Poorly suited Rock fragments	0.50
Hazen, very stony---	30	Poorly suited Rock fragments	0.50	Well suited	
612724 Lordstown, very rocky-----	50	Poorly suited Restrictive layer Slope Rock fragments	0.50 0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
Wallpack, very rocky	40	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
612732 Atherton, very poorly drained----	60	Unsuited Wetness	0.75	Poorly suited Wetness	0.75
Atherton, poorly drained-----	30	Well suited		Well suited	
612738 Fluvaquents, occasionally flooded-----	90	Well suited		Well suited	
612753 Wallpack, aeolian mantle, very stony-	85	Well suited		Well suited	
612756 Wallpack, aeolian mantle, very stony-	85	Well suited		Well suited	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6c.--Land Management, Part III (Site Preparation)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
612757 Wallpack, aeolian mantle, very stony----	85	Poorly suited Slope	0.50	Poorly suited Slope	0.50
612767 Wellsboro, extremely stony----	85	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
612768 Wellsboro, extremely stony----	85	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
613393 Alden, extremely stony-----	90	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
613447 Unadilla-----	85	Well suited		Well suited	
613448 Unadilla-----	85	Well suited		Well suited	
614075 Wurtsboro, extremely stony----	80	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
Swartswood, extremely stony----	20	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
620179 Arnot, very rocky----	55	Unsuited Restrictive layer Rock fragments	1.00 1.00	Unsuited Rock fragments	1.00
Lordstown, very rocky-----	40	Unsuited Rock fragments Restrictive layer	1.00 0.50	Unsuited Rock fragments	1.00
620180 Arnot-----	45	Unsuited Restrictive layer Rock fragments Slope	1.00 1.00 0.50	Unsuited Rock fragments Slope	1.00 0.50
Lordstown-----	40	Unsuited Rock fragments Restrictive layer Slope	1.00 0.50 0.50	Unsuited Rock fragments Slope	1.00 0.50
Rock outcrop-----	15	Not rated		Not rated	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6c.--Land Management, Part III (Site Preparation)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
620181 Arnot-----	60	Unsuited Restrictive layer	1.00	Unsuited Slope	1.00
		Slope	1.00	Rock fragments	1.00
		Rock fragments	1.00		
Lordstown-----	25	Unsuited Slope	1.00	Unsuited Slope	1.00
		Rock fragments	1.00	Rock fragments	1.00
		Restrictive layer	0.50		
Rock outcrop-----	15	Not rated		Not rated	
623089 Chippewa, extremely stony-----	80	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
623109 Farmington-----	50	Unsuited Restrictive layer	1.00	Unsuited Rock fragments	1.00
		Rock fragments	1.00		
Rock outcrop-----	40	Not rated		Not rated	
624811 Galway, very rocky--	80	Unsuited Slope	1.00	Unsuited Slope	1.00
		Rock fragments	1.00	Rock fragments	1.00
		Restrictive layer	0.50		
624813 Lackawanna, extremely stony----	85	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
624816 Lordstown, very rocky-----	50	Poorly suited Restrictive layer	0.50	Poorly suited Rock fragments	0.50
		Rock fragments	0.50		
Wallpack, very rocky	35	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
624822 Lordstown-----	50	Poorly suited Restrictive layer	0.50	Poorly suited Slope	0.50
		Slope	0.50		
Wallpack-----	35	Poorly suited Slope	0.50	Poorly suited Slope	0.50
624823 Lordstown-----	50	Poorly suited Restrictive layer	0.50	Well suited	
Wallpack-----	35	Well suited		Well suited	



# Soil Survey of Delaware Water Gap National Recreation Area

Table 6c.--Land Management, Part III (Site Preparation)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
624824 Lordstown-----	50	Poorly suited Restrictive layer	0.50	Well suited	
Wallpack-----	35	Well suited		Well suited	
624826 Manlius, very rocky-	60	Unsuited Slope Restrictive layer Rock fragments	1.00 0.50 0.50	Unsuited Slope Rock fragments	1.00 0.50
Nassau, very rocky--	25	Unsuited Restrictive layer Slope Rock fragments	1.00 1.00 0.50	Unsuited Slope Rock fragments	1.00 0.50
624827 Nassau, very rocky--	55	Unsuited Restrictive layer Rock fragments	1.00 0.50	Poorly suited Rock fragments	0.50
Manlius, very rocky-	44	Poorly suited Rock fragments Restrictive layer	0.50 0.50	Poorly suited Rock fragments	0.50
624828 Nassau, very rocky--	55	Unsuited Restrictive layer Rock fragments	1.00 0.50	Poorly suited Rock fragments	0.50
Manlius, very rocky-	44	Poorly suited Rock fragments Restrictive layer	0.50 0.50	Poorly suited Rock fragments	0.50
624829 Nassau, very rocky--	55	Unsuited Restrictive layer Slope Rock fragments	1.00 0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
Manlius, very rocky-	44	Poorly suited Slope Rock fragments Restrictive layer	0.50 0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
624832 Nassau-----	50	Unsuited Restrictive layer Slope Rock fragments	1.00 1.00 0.50	Unsuited Slope Rock fragments	1.00 0.50
Rock outcrop-----	45	Not rated		Not rated	
624841 Oquaga-----	60	Unsuited Slope Restrictive layer Rock fragments	1.00 0.50 0.50	Unsuited Slope Rock fragments	1.00 0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6c.--Land Management, Part III (Site Preparation)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
624841 Rock outcrop-----	25	Not rated		Not rated	
624845 Rock outcrop-----	45	Not rated		Not rated	
Farmington-----	35	Unsuited		Poorly suited	
		Restrictive layer	1.00	Slope	0.50
		Slope	0.50	Rock fragments	0.50
		Rock fragments	0.50		
Galway-----	20	Poorly suited		Poorly suited	
		Restrictive layer	0.50	Slope	0.50
		Slope	0.50	Rock fragments	0.50
		Rock fragments	0.50		
624846 Rock outcrop-----	40	Not rated		Not rated	
Arnot-----	30	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Restrictive layer	1.00	Rock fragments	1.00
		Rock fragments	1.00		
Rubble land-----	20	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	1.00	Rock fragments	1.00
626816 Udifluvents, occasionally flooded-----	90	Well suited		Well suited	
635458 Oquaga, very rocky--	55	Poorly suited		Poorly suited	
		Restrictive layer	0.50	Rock fragments	0.50
		Rock fragments	0.50		
Lackawanna, very rocky-----	30	Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.50
635459 Oquaga, very rocky--	50	Poorly suited		Poorly suited	
		Restrictive layer	0.50	Slope	0.50
		Slope	0.50	Rock fragments	0.50
		Rock fragments	0.50		
Lackawanna, very rocky-----	35	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50	Rock fragments	0.50
740953 Delaware, rarely flooded-----	80	Well suited		Well suited	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6c.--Land Management, Part III (Site Preparation)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
740968 Nassau, very rocky--	55	Unsuited Restrictive layer Rock fragments	1.00 0.50	Poorly suited Rock fragments	0.50
Manlius, very rocky--	44	Poorly suited Rock fragments Restrictive layer	0.50 0.50	Poorly suited Rock fragments	0.50
740969 Nassau, very rocky--	55	Unsuited Restrictive layer Slope Rock fragments	1.00 0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
Manlius, very rocky--	44	Poorly suited Slope Rock fragments Restrictive layer	0.50 0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
740971 Oquaga, very rocky--	55	Poorly suited Restrictive layer Rock fragments	0.50 0.50	Poorly suited Rock fragments	0.50
Lackawanna, very rocky-----	30	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
740972 Oquaga, very rocky--	50	Poorly suited Restrictive layer Slope Rock fragments	0.50 0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
Lackawanna, very rocky-----	35	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
740974 Oquaga-----	60	Unsuited Slope Restrictive layer Rock fragments	1.00 0.50 0.50	Unsuited Slope Rock fragments	1.00 0.50
Rock outcrop-----	25	Not rated		Not rated	
740975 Rock outcrop-----	40	Not rated		Not rated	
Arnot-----	30	Unsuited Slope Restrictive layer Rock fragments	1.00 1.00 1.00	Unsuited Slope Rock fragments	1.00 1.00
Rubble land-----	20	Unsuited Slope Rock fragments	1.00 1.00	Unsuited Slope Rock fragments	1.00 1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6c.--Land Management, Part III (Site Preparation)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
740987 Scio-----	80	Well suited		Well suited	
740988 Udifluvents, occasionally flooded-----	90	Well suited		Well suited	
740991 Unadilla-----	85	Well suited		Well suited	
740992 Unadilla-----	85	Well suited		Well suited	
740995 Wellsboro, extremely stony----	85	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
740996 Wellsboro, extremely stony----	85	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
741149 Lackawanna, extremely stony----	85	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
741150 Lackawanna, extremely stony----	85	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
801114 Oquaga-----	75	Poorly suited Restrictive layer Rock fragments	0.50 0.50	Poorly suited Rock fragments	0.50
Rock outcrop-----	15	Not rated		Not rated	
810906 Oquaga-----	75	Poorly suited Restrictive layer Rock fragments	0.50 0.50	Poorly suited Rock fragments	0.50
Rock outcrop-----	15	Not rated		Not rated	
1147465 Alden, extremely stony-----	90	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
1147467 Arnot, very rocky---	55	Unsuited Restrictive layer Rock fragments	1.00 1.00	Unsuited Rock fragments	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6c.--Land Management, Part III (Site Preparation)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1147467 Lordstown, very rocky-----	40	Unsuited Rock fragments Restrictive layer	1.00 0.50	Unsuited Rock fragments	1.00
1147468 Arnot-----	45	Unsuited Restrictive layer Rock fragments Slope	1.00 1.00 0.50	Unsuited Rock fragments Slope	1.00 0.50
Lordstown-----	40	Unsuited Rock fragments Restrictive layer Slope	1.00 0.50 0.50	Unsuited Rock fragments Slope	1.00 0.50
Rock outcrop-----	15	Not rated		Not rated	
1147469 Arnot-----	60	Unsuited Restrictive layer Slope Rock fragments	1.00 1.00 1.00	Unsuited Slope Rock fragments	1.00 1.00
Lordstown-----	25	Unsuited Slope Rock fragments Restrictive layer	1.00 1.00 0.50	Unsuited Slope Rock fragments	1.00 1.00
Rock outcrop-----	15	Not rated		Not rated	
1147470 Atherton, very poorly drained----	60	Unsuited Wetness	0.75	Poorly suited Wetness	0.75
Atherton, poorly drained-----	30	Well suited		Well suited	
1147471 Catden-----	85	Well suited		Well suited	
1147474 Chippewa, extremely stony-----	80	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
1147475 Colonie-----	80	Well suited		Well suited	
1147478 Delaware, rarely flooded-----	80	Well suited		Well suited	
1147482 Fredon, very stony--	50	Well suited		Well suited	
Halsey, very stony--	40	Well suited		Well suited	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6c.--Land Management, Part III (Site Preparation)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1147485 Hazen, very stony---	60	Poorly suited Rock fragments	0.50	Well suited	
Hoosic, very stony--	35	Well suited		Poorly suited Rock fragments	0.50
1147490 Hoosic, very stony--	60	Well suited		Poorly suited Rock fragments	0.50
Hazen, very stony---	30	Poorly suited Rock fragments	0.50	Well suited	
1147491 Hoosic, very stony--	50	Unsuited Slope	1.00	Unsuited Slope Rock fragments	1.00 0.50
Otisville, very stony-----	40	Unsuited Slope	1.00	Unsuited Slope	1.00
1147492 Lackawanna, extremely stony----	85	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
1147500 Wurtsboro, extremely stony----	90	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
1147501 Wurtsboro, extremely stony----	60	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
Swartswood, extremely stony----	40	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
1147502 Wurtsboro, extremely stony----	60	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
Swartswood, extremely stony----	40	Poorly suited Rock fragments	0.50	Poorly suited Rock fragments	0.50
1147527 Udorthents-----	60	Well suited		Well suited	
Urban land-----	40	Not rated		Not rated	
1147532 Udorthents-----	100	Well suited		Well suited	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6c.--Land Management, Part III (Site Preparation)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1147533 Wurtsboro, extremely stony----	80	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
Swartswood, extremely stony----	20	Poorly suited Slope Rock fragments	0.50 0.50	Poorly suited Slope Rock fragments	0.50 0.50
1948749 Arnot-----	90	Unsuited Restrictive layer	1.00	Well suited	
1948750 Arnot-----	90	Unsuited Restrictive layer	1.00	Well suited	
1948751 Arnot-----	90	Unsuited Restrictive layer Slope	1.00 0.50	Poorly suited Slope	0.50
1948774 Conotton-----	90	Well suited		Well suited	
1948775 Conotton-----	95	Well suited		Well suited	
1948776 Conotton-----	95	Poorly suited Slope	0.50	Poorly suited Slope	0.50
1948777 Conotton-----	95	Unsuited Slope	1.00	Unsuited Slope	1.00
1948797 Manlius-----	90	Unsuited Restrictive layer	1.00	Well suited	
1948802 Manlius-----	90	Unsuited Restrictive layer	1.00	Well suited	
1948818 Manlius-----	90	Unsuited Restrictive layer Slope	1.00 0.50	Poorly suited Slope	0.50
1948832 Penargyl-----	90	Well suited		Well suited	
1948846 Phelps-----	90	Well suited		Well suited	
1948855 Udorthents, loamy---	95	Well suited		Well suited	



# Soil Survey of Delaware Water Gap National Recreation Area

Table 6c.--Land Management, Part III (Site Preparation)--Continued

Map unit symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (deep)		Suitability for mechanical site preparation (surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1948989					
Urban land-----	65	Not rated		Not rated	
Delaware-----	25	Well suited		Well suited	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6d.--Land Management, Part IV (Site Restoration)

[Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
290836 Hoosic, very stony--	50	Low Texture/slope/ rock fragments	0.10	Low	
Otisville, very stony-----	40	Moderate Texture/slope/ surface layer thickness/rock fragments	0.50	Low	
296265 Alden-----	100	Low Texture/rock fragments	0.10	High Wetness	1.00
296269 Fluvents, (alluvial land)-----	70	Moderate Texture/rock fragments	0.50	Low	
296271 Alvira-----	55	Moderate Texture/rock fragments	0.50	High Wetness	1.00
Watson-----	35	Low Texture/rock fragments	0.10	Low	
296272 Bath-----	85	Low Texture/rock fragments	0.10	Low	
296273 Bath-----	85	Low Texture/rock fragments	0.10	Low	
296274 Bath-----	85	Low Texture/rock fragments	0.10	Low	
296275 Bath-----	90	Low Texture/rock fragments	0.10	Low	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6d.--Land Management, Part IV (Site Restoration)--Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
296276 Bath-----	90	Low Texture/rock fragments	0.10	Low	
296277 Benson-----	55	Low Texture/rock fragments	0.10	Low	
296278 Benson-----	60	Low Texture/rock fragments	0.10	Low	
Rock outcrop-----	20	Not rated		Not rated	
296279 Benson-----	60	Low		Low	
Rock outcrop-----	25	Not rated		Not rated	
296280 Braceville-----	90	Moderate Texture/surface layer thickness/rock fragments	0.50	Low	
296281 Braceville-----	90	Moderate Texture/surface layer thickness/rock fragments	0.50	Low	
296283 Buchanan-----	90	Moderate Texture/surface layer thickness/rock fragments	0.50	Low	
296288 Chippewa-----	48	Low Texture/rock fragments	0.10	High Wetness	1.00
Norwich-----	48	Low Texture/rock fragments	0.10	High Wetness	1.00
296289 Chippewa-----	47	Low Texture/rock fragments	0.10	High Wetness	1.00
Norwich-----	47	Low Texture/rock fragments	0.10	High Wetness	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6d.--Land Management, Part IV (Site Restoration)--Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
296295 Udorthents, cut and fill-----	90	Not rated		Not rated	
296297 Dekalb-----	100	Moderate Texture/rock fragments	0.50	Low	
296298 Dekalb-----	100	Moderate Texture/slope/ rock fragments	0.50	Low	
296303 Hazleton-----	100	Moderate Texture/rock fragments	0.50	Low	
296304 Holly-----	100	Low Texture/rock fragments	0.10	High Wetness	1.00
296311 Lackawanna-----	40	Low		Low	
Bath-----	30	Low		Low	
296312 Lackawanna-----	80	Low Texture/rock fragments	0.10	Low	
296313 Lackawanna-----	80	Low Texture/rock fragments	0.10	Low	
296315 Lackawanna-----	80	Low Texture/rock fragments	0.10	Low	
296316 Lackawanna-----	80	Low Texture/rock fragments	0.10	Low	
296317 Laidig-----	100	Moderate Texture/rock fragments	0.50	Low	
296326 Lordstown-----	85	Low Texture/rock fragments	0.10	Low	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6d.--Land Management, Part IV (Site Restoration)--Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
296327 Lordstown-----	85	Low Texture/rock fragments	0.10	Low	
296328 Lordstown-----	40	Moderate Texture/slope/ rock fragments	0.50	Low	
Oquaga-----	35	Moderate Texture/slope/ rock fragments	0.50	Low	
296329 Mardin-----	85	Low Texture/rock fragments	0.10	High Wetness	1.00
296330 Mardin-----	85	Low Texture/rock fragments	0.10	High Wetness	1.00
296331 Mardin-----	85	Moderate Texture/rock fragments	0.50	High Wetness	1.00
296332 Mardin-----	87	Moderate Texture/rock fragments	0.50	High Wetness	1.00
296335 Meckesville-----	100	Low Texture/rock fragments	0.10	Low	
296337 Meckesville-----	100	Low Texture/rock fragments	0.10	Low	
296338 Morris-----	80	Low Texture/rock fragments	0.10	High Wetness	1.00
296339 Morris-----	75	Moderate Texture/rock fragments	0.50	High Wetness	1.00
296340 Morris-----	80	Moderate Texture/rock fragments	0.50	High Wetness	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6d.--Land Management, Part IV (Site Restoration)--Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
296341 Freetown, mucky peat	100	Low		High Wetness Soil reaction	1.00 0.50
296342 Paupack, mucky peat (shallow)-----	100	Low		High Wetness Soil reaction	1.00 0.50
296343 Oquaga-----	50	Moderate Texture/rock fragments	0.50	Low	
Lackawanna-----	35	Low Texture/rock fragments	0.10	Low	
296344 Oquaga-----	55	Moderate Texture/rock fragments	0.50	Low	
Lackawanna-----	30	Low Texture/rock fragments	0.10	Low	
296346 Oquaga-----	50	Moderate Texture/rock fragments	0.50	Low	
Lackawanna-----	35	Moderate Texture/rock fragments	0.50	Low	
296347 Oquaga-----	60	Moderate Texture/rock fragments	0.50	Low	
Lackawanna-----	30	Moderate Texture/rock fragments	0.50	Low	
296348 Philo-----	85	Low Texture/rock fragments	0.10	Low	
296349 Pope-----	90	Low Texture/rock fragments	0.10	Low	
296350 Pope-----	90	Low Texture/rock fragments	0.10	Low	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6d.--Land Management, Part IV (Site Restoration)--Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
296351 Rexford, somewhat poorly drained-----	40	Low Texture/rock fragments	0.10	High Wetness	1.00
Rexford, poorly drained-----	35	Low Texture/rock fragments	0.10	High Wetness	1.00
296355 Sheffield-----	100	Low Texture/rock fragments	0.10	High Wetness	1.00
296363 Dystrochrepts, very stony-----	85	Moderate Texture/slope/ rock fragments	0.50	Low	
296369 Wayland-----	100	Low Texture/rock fragments	0.10	High Wetness	1.00
296376 Wellsboro-----	80	Low Texture/rock fragments	0.10	High Wetness	1.00
296379 Wellsboro-----	85	Low Texture/rock fragments	0.10	High Wetness	1.00
296385 Wyoming-----	85	Low Texture/rock fragments	0.10	Low	
296386 Wyoming-----	85	Low Texture/rock fragments	0.10	Low	
296387 Wyoming-----	85	Low Texture/rock fragments	0.10	Low	
296388 Wyoming-----	85	Low Texture/rock fragments	0.10	Low	
296389 Wyoming-----	100	Moderate Texture/slope/ rock fragments	0.50	Low	



# Soil Survey of Delaware Water Gap National Recreation Area

Table 6d.--Land Management, Part IV (Site Restoration)--Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
296390 Water-----	100	Not rated		Not rated	
297185 Edgemere-----	42	High Texture/surface layer thickness/rock fragments	1.00	High Wetness	1.00
Shohola-----	42	Moderate Texture/surface layer thickness/rock fragments	0.50	High Wetness Soil reaction	1.00 0.50
297186 Edgemere-----	75	High Texture/surface layer thickness/rock fragments	1.00	High Wetness	1.00
297188 Manlius-----	40	Moderate Texture/rock fragments	0.50	Low	
Arnot-----	35	Moderate Texture/surface layer thickness/rock fragments	0.50	Low	
Rock outcrop-----	15	Not rated		Not rated	
297189 Manlius-----	40	Moderate Texture/slope/ rock fragments	0.50	Low	
Arnot-----	35	High Texture/slope/ surface layer thickness/rock fragments	1.00	Low	
Rock outcrop-----	15	Not rated		Not rated	
297190 Braceville-----	82	Low Texture/rock fragments	0.10	Low	
297191 Wyalusing-----	85	Low Texture/rock fragments	0.10	High Wetness	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6d.--Land Management, Part IV (Site Restoration)--Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
297192 Pope-----	95	Low Texture/rock fragments	0.10	Low	
297193 Paupack-----	90	Low		High Wetness Soil reaction	1.00 0.50
297196 Freetown-----	94	Low		High Wetness Soil reaction	1.00 0.50
297197 Manlius-----	90	Moderate Texture/rock fragments	0.50	Low	
297198 Manlius-----	86	Moderate Texture/rock fragments	0.50	Low	
297201 Oquaga-----	75	Moderate Texture/surface layer thickness/rock fragments	0.50	Low	
297203 Delaware-----	93	Low Texture/rock fragments	0.10	Low	
297204 Delaware-----	82	Low Texture/rock fragments	0.10	Low	
297205 Delaware-----	80	Low Texture/rock fragments	0.10	Low	
297209 Philo-----	85	Low Texture/rock fragments	0.10	Low	
297210 Barbour-----	85	Low Texture/rock fragments	0.10	Low	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6d.--Land Management, Part IV (Site Restoration)--Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
297216 Wurtsboro-----	92	Moderate Texture/surface layer thickness/rock fragments	0.50	Low	
297217 Wurtsboro-----	88	Moderate Texture/surface layer thickness/rock fragments	0.50	Low	
297227 Arnot-----	88	Moderate Texture/surface layer thickness/rock fragments	0.50	Low	
297228 Arnot-----	85	Moderate Texture/surface layer thickness/rock fragments	0.50	Low	
297229 Wyoming-----	90	Moderate Texture/surface layer thickness/rock fragments	0.50	Low	
297230 Wyoming-----	90	Moderate Texture/surface layer thickness/rock fragments	0.50	Low	
297231 Wyoming-----	90	Moderate Texture/surface layer thickness/rock fragments	0.50	Low	
297236 Suncook-----	91	Moderate Texture/rock fragments	0.50	Low	
297237 Mardin-----	85	Low Texture/rock fragments	0.10	High Wetness	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6d.--Land Management, Part IV (Site Restoration)--Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
297238 Mardin-----	85	Low Texture/rock fragments	0.10	High Wetness	1.00
297239 Mardin-----	85	Low Texture/rock fragments	0.10	High Wetness	1.00
297240 Mardin-----	85	Low Texture/rock fragments	0.10	High Wetness	1.00
297241 Unadilla-----	90	Low Texture/rock fragments	0.10	Low	
297242 Shohola-----	62	Moderate Texture/surface layer thickness/rock fragments	0.50	High Wetness Soil reaction	1.00 0.50
Edgemere-----	29	High Texture/surface layer thickness/rock fragments	1.00	High Wetness	1.00
297243 Shohola-----	62	Moderate Texture/surface layer thickness/rock fragments	0.50	High Wetness Soil reaction	1.00 0.50
Edgemere-----	29	High Texture/surface layer thickness/rock fragments	1.00	High Wetness	1.00
297244 Lordstown-----	40	Moderate Texture/surface layer thickness/rock fragments	0.50	Low	
Swartswood-----	35	Moderate Texture/surface layer thickness/rock fragments	0.50	Low	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6d.--Land Management, Part IV (Site Restoration)--Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
297247 Chenango-----	86	Low Texture/rock fragments	0.10	Low	
297248 Chenango-----	85	Low Texture/rock fragments	0.10	Low	
297249 Chenango-----	90	Low Texture/rock fragments	0.10	Low	
297253 Craigs ville-----	50	Moderate Texture/rock fragments	0.50	Low	
Wyoming-----	40	Moderate Texture/surface layer thickness/rock fragments	0.50	Low	
297254 Pits, shale-----	40	Not rated		Not rated	
Pits, gravel-----	40	Not rated		Not rated	
298049 Wurtsboro, extremely stony----	90	Low Texture/surface layer thickness/rock fragments	0.10	High Wetness	1.00
298050 Wurtsboro, extremely stony----	60	Low Texture/surface layer thickness/rock fragments	0.10	High Wetness	1.00
Swartswood, extremely stony----	40	Low Texture/surface layer thickness/rock fragments	0.10	Low	
298051 Wurtsboro, extremely stony----	60	Low Texture/surface layer thickness/rock fragments	0.10	High Wetness	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6d.--Land Management, Part IV (Site Restoration)--Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
298051 Swartswood, extremely stony----	40	Low Texture/surface layer thickness/rock fragments	0.10	Low	
298075 Colonie-----	80	High Texture/surface layer thickness/rock fragments	1.00	Low	
298188 Lackawanna, extremely stony----	85	Low Texture/surface layer thickness/rock fragments	0.10	Moderate Soil reaction	0.50
298189 Lackawanna, extremely stony----	85	Low Texture/surface layer thickness/rock fragments	0.10	Moderate Soil reaction	0.50
298221 Swartswood, extremely stony----	90	Low Texture/surface layer thickness/rock fragments	0.10	Low	
298222 Swartswood, extremely stony----	90	Low Texture/surface layer thickness/rock fragments	0.10	Low	
298223 Swartswood, extremely stony----	85	Low Texture/surface layer thickness/rock fragments	0.10	Low	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6d.--Land Management, Part IV (Site Restoration)--Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
298255 Delaware, rarely flooded-----	80	Low Texture/surface layer thickness/rock fragments	0.10	Low	
298256 Delaware, rarely flooded-----	80	Low Texture/surface layer thickness/rock fragments	0.10	Low	
298257 Wallpack-----	85	Low Texture/surface layer thickness/rock fragments	0.10	Low	
298258 Wallpack-----	85	Low Texture/surface layer thickness/rock fragments	0.10	Low	
298259 Wallpack, extremely stony-----	85	Low Texture/surface layer thickness/rock fragments	0.10	Low	
298260 Wallpack, extremely stony-----	85	Low Texture/surface layer thickness/rock fragments	0.10	Low	
298261 Wallpack-----	85	Low Texture/surface layer thickness/rock fragments	0.10	Low	
298262 Wallpack, extremely stony-----	85	Low Texture/surface layer thickness/rock fragments	0.10	Low	



# Soil Survey of Delaware Water Gap National Recreation Area

Table 6d.--Land Management, Part IV (Site Restoration)--Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
298265 Venango, extremely stony-----	90	Low Texture/rock fragments	0.10	High Wetness	1.00
298266 Venango, extremely stony-----	85	Low Texture/rock fragments	0.10	High Wetness	1.00
298409 Swartswood, extremely stony----	90	Low Texture/surface layer thickness/rock fragments	0.10	Low	
298411 Swartswood, extremely stony----	90	Low Texture/surface layer thickness/rock fragments	0.10	Low	
298413 Swartswood, extremely stony----	85	Low Texture/surface layer thickness/rock fragments	0.10	Low	
318498 Hazen, very stony---	60	Low Texture/rock fragments	0.10	Low	
Hoosic, very stony--	35	Low Texture/rock fragments	0.10	Low	
318533 Hazen, very stony---	50	Low Texture/rock fragments	0.10	Low	
Hoosic, very stony--	40	Low Texture/rock fragments	0.10	Low	
319783 Catden-----	85	Low		High Wetness	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6d.--Land Management, Part IV (Site Restoration)--Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
319784 Fredon, very stony--	50	Low Texture/rock fragments	0.10	High Wetness	1.00
Halsey, very stony--	40	Low Texture/surface layer thickness/rock fragments	0.10	High Wetness	1.00
543222 Andover, extremely stony-----	55	Low Texture/rock fragments	0.10	High Wetness	1.00
Buchanan, extremely stony-----	40	Low Texture/rock fragments	0.10	Low	
543243 Berks-----	65	Low Texture/rock fragments	0.10	Moderate Available water	0.50
Weikert-----	25	Low		Moderate Available water	0.50
543246 Buchanan-----	75	Low Texture/rock fragments	0.10	Low	
543247 Buchanan, extremely stony-----	80	Low Texture/surface layer thickness/rock fragments	0.10	Low	
543257 Chippewa-----	90	Low Texture/rock fragments	0.10	High Wetness	1.00
543258 Chippewa-----	90	Low Texture/rock fragments	0.10	High Wetness	1.00
543259 Chippewa, extremely stony-----	90	Low Texture/rock fragments	0.10	High Wetness	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6d.--Land Management, Part IV (Site Restoration)--Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
543271 Delaware-----	90	Low Texture/rock fragments	0.10	Low	
543276 Fluvaquents-----	85	Low Texture/rock fragments	0.10	High Wetness	1.00
543292 Hazleton, extremely stony-----	90	Low Texture/rock fragments	0.10	Moderate Available water	0.50
543293 Hazleton, extremely stony-----	90	Low		Moderate Available water	0.50
543299 Laidig, extremely stony-----	90	Moderate Texture/surface layer thickness/rock fragments	0.50	Low	
543300 Laidig, extremely stony-----	90	Moderate Texture/surface layer thickness/rock fragments	0.50	Moderate Available water	0.50
543304 Laidig-----	50	High Texture/slope/ surface layer thickness/rock fragments	1.00	Moderate Available water	0.50
Rubble land-----	40	Low		Not rated	
543318 Rubble land-----	75	Low		Moderate Soil reaction	0.50
543327 Swartswood-----	90	Low Texture/rock fragments	0.10	Low	
543328 Swartswood-----	90	Low Texture/rock fragments	0.10	Low	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6d.--Land Management, Part IV (Site Restoration)--Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
543330 Swartswood, extremely stony----	50	Low Texture/rock fragments	0.10	Low	
Wurtsboro, extremely stony----	30	Low Texture/rock fragments	0.10	Low	
543331 Swartswood, extremely stony----	50	Low Texture/rock fragments	0.10	Moderate Available water	0.50
Wurtsboro, extremely stony----	30	Low Texture/rock fragments	0.10	Moderate Available water	0.50
543359 Volusia-----	85	Low Texture/rock fragments	0.10	High Wetness	1.00
543360 Volusia, extremely stony-----	85	Low Texture/rock fragments	0.10	High Wetness	1.00
543374 Wurtsboro-----	90	Low Texture/rock fragments	0.10	Low	
543375 Wurtsboro-----	90	Low Texture/rock fragments	0.10	Low	
612280 Scio-----	80	Low Texture/rock fragments	0.10	Low	
612666 Colonie-----	80	High Texture/surface layer thickness/rock fragments	1.00	Low	
612668 Hoosic, very stony--	60	Low Texture/rock fragments	0.10	Low	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6d.--Land Management, Part IV (Site Restoration)--Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
612668 Hazen, very stony---	30	Low Texture/rock fragments	0.10	Low	
612724 Lordstown, very rocky-----	50	Low Texture/surface layer thickness/rock fragments	0.10	Low	
Wallpack, very rocky	40	Low Texture/surface layer thickness/rock fragments	0.10	Low	
612732 Atherton, very poorly drained-----	60	Low Texture/surface layer thickness/rock fragments	0.10	High Wetness	1.00
Atherton, poorly drained-----	30	Low Texture/rock fragments	0.10	High Wetness	1.00
612738 Fluvaquents, occasionally flooded-----	90	Low Texture/rock fragments	0.10	High Wetness	1.00
612753 Wallpack, aeolian mantle, very stony-	85	Low Texture/surface layer thickness/rock fragments	0.10	Low	
612756 Wallpack, aeolian mantle, very stony-	85	Low Texture/surface layer thickness/rock fragments	0.10	Low	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6d.--Land Management, Part IV (Site Restoration)--Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
612757 Wallpack, aeolian mantle, very stony-	85	Low Texture/surface layer thickness/rock fragments	0.10	Low	
612767 Wellsboro, extremely stony----	85	Low Texture/rock fragments	0.10	Low	
612768 Wellsboro, extremely stony----	85	Low Texture/rock fragments	0.10	Low	
613393 Alden, extremely stony-----	90	Low Texture/rock fragments	0.10	High Wetness	1.00
613447 Unadilla-----	85	Low Texture/rock fragments	0.10	Low	
613448 Unadilla-----	85	Low Texture/rock fragments	0.10	Low	
614075 Wurtsboro, extremely stony----	80	Low Texture/surface layer thickness/rock fragments	0.10	High Wetness	1.00
Swartswood, extremely stony----	20	Low Texture/surface layer thickness/rock fragments	0.10	Low	
620179 Arnot, very rocky---	55	Low Texture/surface layer thickness/rock fragments	0.10	Low	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6d.--Land Management, Part IV (Site Restoration)--Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
620179 Lordstown, very rocky-----	40	Low Texture/surface layer thickness/rock fragments	0.10	Low	
620180 Arnot-----	45	Low Texture/surface layer thickness/rock fragments	0.10	Low	
Lordstown-----	40	Low Texture/surface layer thickness/rock fragments	0.10	Low	
Rock outcrop-----	15	Not rated		Not rated	
620181 Arnot-----	60	Moderate Texture/slope/ surface layer thickness/rock fragments	0.50	Low	
Lordstown-----	25	Moderate Texture/slope/ surface layer thickness/rock fragments	0.50	Low	
Rock outcrop-----	15	Not rated		Not rated	
623089 Chippewa, extremely stony-----	80	Low Texture/surface layer thickness/rock fragments	0.10	High Wetness	1.00
623109 Farmington-----	50	Low Texture/surface layer thickness/rock fragments	0.10	Low	
Rock outcrop-----	40	Not rated		Not rated	



# Soil Survey of Delaware Water Gap National Recreation Area

Table 6d.--Land Management, Part IV (Site Restoration)--Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
624811 Galway, very rocky--	80	Moderate Texture/slope/ surface layer thickness/rock fragments	0.50	Low	
624813 Lackawanna, extremely stony----	85	Low Texture/surface layer thickness/rock fragments	0.10	Moderate Soil reaction	0.50
624816 Lordstown, very rocky-----	50	Low Texture/surface layer thickness/rock fragments	0.10	Low	
Wallpack, very rocky	35	Low Texture/surface layer thickness/rock fragments	0.10	Low	
624822 Lordstown-----	50	Low Texture/surface layer thickness/rock fragments	0.10	Low	
Wallpack-----	35	Low Texture/surface layer thickness/rock fragments	0.10	Low	
624823 Lordstown-----	50	Low Texture/surface layer thickness/rock fragments	0.10	Low	
Wallpack-----	35	Low Texture/surface layer thickness/rock fragments	0.10	Low	
624824 Lordstown-----	50	Low Texture/surface layer thickness/rock fragments	0.10	Low	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6d.--Land Management, Part IV (Site Restoration)--Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
624824 Wallpack-----	35	Low Texture/surface layer thickness/rock fragments	0.10	Low	
624826 Manlius, very rocky-	60	Moderate Texture/slope/ surface layer thickness/rock fragments	0.50	Low	
Nassau, very rocky--	25	Moderate Texture/slope/ surface layer thickness/rock fragments	0.50	Low	
624827 Nassau, very rocky--	55	Low Texture/rock fragments	0.10	Low	
Manlius, very rocky-	44	Low Texture/rock fragments	0.10	Low	
624828 Nassau, very rocky--	55	Low Texture/rock fragments	0.10	Low	
Manlius, very rocky-	44	Low Texture/rock fragments	0.10	Low	
624829 Nassau, very rocky--	55	Low Texture/rock fragments	0.10	Low	
Manlius, very rocky-	44	Low Texture/rock fragments	0.10	Low	
624832 Nassau-----	50	Moderate Texture/slope/ surface layer thickness/rock fragments	0.50	Low	
Rock outcrop-----	45	Not rated		Not rated	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6d.--Land Management, Part IV (Site Restoration)--Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
624841					
Oquaga-----	60	Moderate Texture/slope/ surface layer thickness/rock fragments	0.50	Low	
Rock outcrop-----	25	Not rated		Not rated	
624845					
Rock outcrop-----	45	Not rated		Not rated	
Farmington-----	35	Low Texture/surface layer thickness/rock fragments	0.10	Low	
Galway-----	20	Low Texture/surface layer thickness/rock fragments	0.10	Low	
624846					
Rock outcrop-----	40	Not rated		Not rated	
Arnot-----	30	Moderate Texture/slope/ surface layer thickness/rock fragments	0.50	Low	
Rubble land-----	20	Not rated		Not rated	
626816					
Udifluvents, occasionally flooded-----	90	Moderate Texture/surface layer thickness/rock fragments	0.50	Low	
635458					
Oquaga, very rocky--	55	Low Texture/surface layer thickness/rock fragments	0.10	Low	
Lackawanna, very rocky-----	30	Low Texture/surface layer thickness/rock fragments	0.10	Moderate Soil reaction	0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6d.--Land Management, Part IV (Site Restoration)--Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
635459 Oquaga, very rocky--	50	Low Texture/surface layer thickness/rock fragments	0.10	Low	
Lackawanna, very rocky-----	35	Low Texture/surface layer thickness/rock fragments	0.10	Moderate Soil reaction	0.50
740953 Delaware, rarely flooded-----	80	Low Texture/surface layer thickness/rock fragments	0.10	Low	
740968 Nassau, very rocky--	55	Low Texture/rock fragments	0.10	Low	
Manlius, very rocky-	44	Low Texture/rock fragments	0.10	Low	
740969 Nassau, very rocky--	55	Low Texture/rock fragments	0.10	Low	
Manlius, very rocky-	44	Low Texture/rock fragments	0.10	Low	
740971 Oquaga, very rocky--	55	Low Texture/surface layer thickness/rock fragments	0.10	Low	
Lackawanna, very rocky-----	30	Low Texture/surface layer thickness/rock fragments	0.10	Moderate Soil reaction	0.50
740972 Oquaga, very rocky--	50	Low Texture/surface layer thickness/rock fragments	0.10	Low	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6d.--Land Management, Part IV (Site Restoration)--Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
740972 Lackawanna, very rocky-----	35	Low Texture/surface layer thickness/rock fragments	0.10	Moderate Soil reaction	0.50
740974 Oquaga-----	60	Moderate Texture/slope/ surface layer thickness/rock fragments	0.50	Low	
Rock outcrop-----	25	Not rated		Not rated	
740975 Rock outcrop-----	40	Not rated		Not rated	
Arnot-----	30	Moderate Texture/slope/ surface layer thickness/rock fragments	0.50	Low	
Rubble land-----	20	Not rated		Not rated	
740987 Scio-----	80	Low Texture/rock fragments	0.10	Low	
740988 Udifluvents, occasionally flooded-----	90	Moderate Texture/surface layer thickness/rock fragments	0.50	Low	
740991 Unadilla-----	85	Low Texture/rock fragments	0.10	Low	
740992 Unadilla-----	85	Low Texture/rock fragments	0.10	Low	
740995 Wellsboro, extremely stony----	85	Low Texture/rock fragments	0.10	Low	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6d.--Land Management, Part IV (Site Restoration)--Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
740996 Wellsboro, extremely stony----	85	Low Texture/rock fragments	0.10	Low	
741149 Lackawanna, extremely stony----	85	Low Texture/surface layer thickness/rock fragments	0.10	Moderate Soil reaction	0.50
741150 Lackawanna, extremely stony----	85	Low Texture/surface layer thickness/rock fragments	0.10	Moderate Soil reaction	0.50
801114 Oquaga-----	75	Low Texture/surface layer thickness/rock fragments	0.10	Low	
Rock outcrop-----	15	Not rated		Not rated	
810906 Oquaga-----	75	Low Texture/surface layer thickness/rock fragments	0.10	Low	
Rock outcrop-----	15	Not rated		Not rated	
1147465 Alden, extremely stony-----	90	Low Texture/rock fragments	0.10	High Wetness	1.00
1147467 Arnot, very rocky---	55	Low Texture/surface layer thickness/rock fragments	0.10	Low	
Lordstown, very rocky-----	40	Low Texture/surface layer thickness/rock fragments	0.10	Low	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6d.--Land Management, Part IV (Site Restoration)--Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1147468					
Arnot-----	45	Low Texture/surface layer thickness/rock fragments	0.10	Low	
Lordstown-----	40	Low Texture/surface layer thickness/rock fragments	0.10	Low	
Rock outcrop-----	15	Not rated		Not rated	
1147469					
Arnot-----	60	Moderate Texture/slope/ surface layer thickness/rock fragments	0.50	Low	
Lordstown-----	25	Moderate Texture/slope/ surface layer thickness/rock fragments	0.50	Low	
Rock outcrop-----	15	Not rated		Not rated	
1147470					
Atherton, very poorly drained-----	60	Low Texture/surface layer thickness/rock fragments	0.10	High Wetness	1.00
Atherton, poorly drained-----	30	Low Texture/rock fragments	0.10	High Wetness	1.00
1147471					
Catden-----	85	Low		High Wetness	1.00
1147474					
Chippewa, extremely stony-----	80	Low Texture/surface layer thickness/rock fragments	0.10	High Wetness	1.00
1147475					
Colonie-----	80	High Texture/surface layer thickness/rock fragments	1.00	Low	



# Soil Survey of Delaware Water Gap National Recreation Area

Table 6d.--Land Management, Part IV (Site Restoration)--Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1147478 Delaware, rarely flooded-----	80	Low Texture/surface layer thickness/rock fragments	0.10	Low	
1147482 Fredon, very stony--	50	Low Texture/rock fragments	0.10	High Wetness	1.00
Halsey, very stony--	40	Low Texture/surface layer thickness/rock fragments	0.10	High Wetness	1.00
1147485 Hazen, very stony---	60	Low Texture/rock fragments	0.10	Low	
Hoosic, very stony--	35	Low Texture/rock fragments	0.10	Low	
1147490 Hoosic, very stony--	60	Low Texture/rock fragments	0.10	Low	
Hazen, very stony---	30	Low Texture/rock fragments	0.10	Low	
1147491 Hoosic, very stony--	50	Low Texture/slope/ rock fragments	0.10	Low	
Otisville, very stony-----	40	Moderate Texture/slope/ surface layer thickness/rock fragments	0.50	Low	
1147492 Lackawanna, extremely stony----	85	Low Texture/surface layer thickness/rock fragments	0.10	Moderate Soil reaction	0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6d.--Land Management, Part IV (Site Restoration)--Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1147500 Wurtsboro, extremely stony----	90	Low Texture/surface layer thickness/rock fragments	0.10	High Wetness	1.00
1147501 Wurtsboro, extremely stony----	60	Low Texture/surface layer thickness/rock fragments	0.10	High Wetness	1.00
Swartswood, extremely stony----	40	Low Texture/surface layer thickness/rock fragments	0.10	Low	
1147502 Wurtsboro, extremely stony----	60	Low Texture/surface layer thickness/rock fragments	0.10	High Wetness	1.00
Swartswood, extremely stony----	40	Low Texture/surface layer thickness/rock fragments	0.10	Low	
1147527 Udorthents-----	60	Low Texture/rock fragments	0.10	Low	
Urban land-----	40	Not rated		Not rated	
1147532 Udorthents-----	100	Low Texture/rock fragments	0.10	Low	
1147533 Wurtsboro, extremely stony----	80	Low Texture/surface layer thickness/rock fragments	0.10	High Wetness	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6d.--Land Management, Part IV (Site Restoration)--Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1147533 Swartswood, extremely stony----	20	Low Texture/surface layer thickness/rock fragments	0.10	Low	
1948749 Arnot-----	90	Low Texture/rock fragments	0.10	Low	
1948750 Arnot-----	90	Low Texture/rock fragments	0.10	Low	
1948751 Arnot-----	90	Low Texture/rock fragments	0.10	Moderate Available water	0.50
1948774 Conotton-----	90	Moderate Texture/rock fragments	0.50	Low	
1948775 Conotton-----	95	Moderate Texture/rock fragments	0.50	Low	
1948776 Conotton-----	95	Moderate Texture/rock fragments	0.50	Moderate Available water	0.50
1948777 Conotton-----	95	Moderate Texture/rock fragments	0.50	Moderate Available water	0.50
1948797 Manlius-----	90	Low Texture/rock fragments	0.10	Low	
1948802 Manlius-----	90	Low Texture/rock fragments	0.10	Low	
1948818 Manlius-----	90	Low Texture/rock fragments	0.10	Moderate Available water	0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 6d.--Land Management, Part IV (Site Restoration)--Continued

Map unit symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1948832 Penargyl-----	90	Low Texture/rock fragments	0.10	Low	
1948846 Phelps-----	90	Low Texture/rock fragments	0.10	Low	
1948855 Udorthents, loamy---	95	Moderate Texture/rock fragments	0.50	Low	
1948989 Urban land-----	65	Not rated		Not rated	
Delaware-----	25	Low Texture/rock fragments	0.10	Low	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7a.--Recreational Development, Part I (Camp and Picnic Areas)

[Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
290836 Hoosic, very stony--	50	Very limited Slope Large stones	1.00 0.19	Very limited Slope Gravel Large stones	1.00 0.61 0.19
Otisville, very stony-----	40	Very limited Slope Large stones	1.00 0.19	Very limited Slope Gravel Large stones	1.00 0.84 0.19
296265 Alden-----	100	Very limited Depth to saturated zone Ponding Slow water movement Dusty	1.00 1.00 0.51 0.03	Very limited Ponding Depth to saturated zone Slow water movement Dusty	1.00 1.00 0.51 0.03
296269 Fluvents, (alluvial land)-----	70	Very limited Flooding Depth to saturated zone	1.00 0.98	Somewhat limited Depth to saturated zone Flooding	0.75 0.40
296271 Alvira-----	55	Very limited Depth to saturated zone Large stones Dusty	1.00 0.53 0.01	Very limited Depth to saturated zone Large stones Dusty	1.00 0.53 0.01
Watson-----	35	Somewhat limited Depth to saturated zone Slow water movement Large stones Dusty	0.98 0.96 0.53 0.01	Somewhat limited Slow water movement Depth to saturated zone Large stones Dusty	0.96 0.75 0.53 0.01
296272 Bath-----	85	Somewhat limited Depth to saturated zone Gravel Dusty	0.28 0.24 0.03	Somewhat limited Gravel Depth to saturated zone Dusty	0.24 0.14 0.03

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7a.--Recreational Development, Part I (Camp and Picnic Areas)--Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
296273					
Bath-----	85	Somewhat limited		Somewhat limited	
		Slope	0.63	Slope	0.63
		Depth to	0.28	Gravel	0.24
		saturated zone		Depth to	0.14
		Gravel	0.24	saturated zone	
		Dusty	0.03	Dusty	0.03
296274					
Bath-----	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to	0.28	Gravel	0.24
		saturated zone		Depth to	0.14
		Gravel	0.24	saturated zone	
		Dusty	0.03	Dusty	0.03
296275					
Bath-----	90	Very limited		Very limited	
		Large stones	1.00	Large stones	1.00
		Depth to	0.28	Depth to	0.14
		saturated zone		saturated zone	
		Gravel	0.11	Gravel	0.11
		Dusty	0.03	Dusty	0.03
296276					
Bath-----	90	Very limited		Very limited	
		Large stones	1.00	Large stones	1.00
		Slope	1.00	Slope	1.00
		Depth to	0.28	Depth to	0.14
		saturated zone		saturated zone	
		Gravel	0.11	Gravel	0.11
		Dusty	0.03	Dusty	0.03
296277					
Benson-----	55	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Dusty	0.05	Dusty	0.05
296278					
Benson-----	60	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Dusty	0.05	Dusty	0.05
Rock outcrop-----	20	Not rated		Not rated	
296279					
Benson-----	60	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Dusty	0.05	Dusty	0.05
Rock outcrop-----	25	Not rated		Not rated	
296280					
Braceville-----	90	Somewhat limited		Somewhat limited	
		Depth to	0.07	Gravel	0.04
		saturated zone		Depth to	0.03
		Gravel	0.04	saturated zone	
		Dusty	0.01	Dusty	0.01

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7a.--Recreational Development, Part I (Camp and Picnic Areas)--Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
296281 Braceville-----	90	Somewhat limited Depth to saturated zone Gravel Dusty	0.07 0.04 0.01	Somewhat limited Gravel Depth to saturated zone Dusty	0.04 0.03 0.01
296283 Buchanan-----	90	Very limited Large stones Depth to saturated zone Dusty	1.00 0.07 0.03	Very limited Large stones Depth to saturated zone Dusty	1.00 0.03 0.03
296288 Chippewa-----	48	Very limited Depth to saturated zone Dusty	1.00 0.03	Very limited Depth to saturated zone Dusty	1.00 0.03
Norwich-----	48	Very limited Depth to saturated zone Dusty	1.00 0.02	Very limited Depth to saturated zone Dusty	1.00 0.02
296289 Chippewa-----	47	Very limited Depth to saturated zone Large stones Dusty Gravel	1.00 1.00 0.03 0.01	Very limited Large stones Depth to saturated zone Dusty Gravel	1.00 1.00 0.03 0.01
Norwich-----	47	Very limited Depth to saturated zone Large stones Dusty	1.00 1.00 0.01	Very limited Large stones Depth to saturated zone Dusty	1.00 1.00 0.01
296295 Udorthents, cut and fill-----	90	Not rated		Not rated	
296297 Dekalb-----	100	Very limited Large stones Slope Dusty	1.00 1.00 0.01	Very limited Large stones Slope Dusty	1.00 1.00 0.01
296298 Dekalb-----	100	Very limited Slope Large stones Dusty	1.00 1.00 0.01	Very limited Large stones Slope Dusty	1.00 1.00 0.01
296303 Hazleton-----	100	Very limited Large stones Slope	1.00 1.00	Very limited Large stones Slope	1.00 1.00



# Soil Survey of Delaware Water Gap National Recreation Area

Table 7a.--Recreational Development, Part I (Camp and Picnic Areas)--Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
296304 Holly-----	100	Very limited Depth to saturated zone Flooding Dusty	 1.00  1.00 0.04	Very limited Depth to saturated zone Flooding Dusty	 1.00  0.40 0.04
296311 Lackawanna-----	40	Very limited Slope Large stones Depth to saturated zone Dusty	 1.00 1.00 0.24 0.01	Very limited Large stones Slope Depth to saturated zone Dusty	 1.00 1.00 0.12 0.01
Bath-----	30	Very limited Slope Large stones Depth to saturated zone Dusty Gravel	 1.00 1.00 0.28 0.03 0.01	Very limited Large stones Slope Depth to saturated zone Dusty Gravel	 1.00 1.00 0.14 0.03 0.01
296312 Lackawanna-----	80	Somewhat limited Depth to saturated zone Large stones Dusty	 0.24 0.14 0.01	Somewhat limited Large stones Depth to saturated zone Dusty	 0.14 0.12 0.01
296313 Lackawanna-----	80	Somewhat limited Slope Depth to saturated zone Large stones Dusty	 0.63 0.24 0.14 0.01	Somewhat limited Slope Large stones Depth to saturated zone Dusty	 0.63 0.14 0.12 0.01
296315 Lackawanna-----	80	Very limited Large stones Depth to saturated zone Dusty	 1.00 0.24 0.01	Very limited Large stones Depth to saturated zone Dusty	 1.00 0.12 0.01
296316 Lackawanna-----	80	Very limited Large stones Slope Depth to saturated zone Dusty	 1.00 1.00 0.24 0.01	Very limited Large stones Slope Depth to saturated zone Dusty	 1.00 1.00 0.12 0.01
296317 Laidig-----	100	Very limited Large stones Dusty	 1.00 0.06	Very limited Large stones Dusty	 1.00 0.06

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7a.--Recreational Development, Part I (Camp and Picnic Areas)--Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
296326 Lordstown-----	85	Very limited Large stones Dusty	1.00 0.02	Very limited Large stones Dusty	1.00 0.02
296327 Lordstown-----	85	Very limited Large stones Slope Dusty	1.00 1.00 0.02	Very limited Large stones Slope Dusty	1.00 1.00 0.02
296328 Lordstown-----	40	Very limited Slope Large stones Dusty	1.00 1.00 0.01	Very limited Large stones Slope Dusty	1.00 1.00 0.01
Oquaga-----	35	Very limited Slope Large stones Gravel Dusty	1.00 1.00 0.08 0.02	Very limited Large stones Slope Gravel Dusty	1.00 1.00 0.08 0.02
296329 Mardin-----	85	Very limited Depth to saturated zone Gravel Dusty	1.00 0.24 0.03	Somewhat limited Depth to saturated zone Gravel Dusty	0.94 0.24 0.03
296330 Mardin-----	85	Very limited Depth to saturated zone Slope Gravel Dusty	1.00 0.63 0.24 0.03	Somewhat limited Depth to saturated zone Slope Gravel Dusty	0.94 0.63 0.24 0.03
296331 Mardin-----	85	Very limited Depth to saturated zone Large stones Dusty Gravel	1.00 0.53 0.03 0.01	Somewhat limited Depth to saturated zone Large stones Dusty Gravel	0.94 0.53 0.03 0.01
296332 Mardin-----	87	Very limited Depth to saturated zone Slope Large stones Dusty Gravel	1.00 1.00 0.53 0.03 0.01	Very limited Slope Depth to saturated zone Large stones Dusty Gravel	1.00 0.94 0.53 0.03 0.01
296335 Meckesville-----	100	Somewhat limited Slope Gravel Dusty	0.63 0.16 0.03	Somewhat limited Slope Gravel Dusty	0.63 0.16 0.03

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7a.--Recreational Development, Part I (Camp and Picnic Areas)--Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
296337 Meckesville-----	100	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones	0.53	Large stones	0.53
		Dusty	0.03	Dusty	0.03
296338 Morris-----	80	Very limited		Very limited	
		Depth to	1.00	Depth to	1.00
		saturated zone		saturated zone	
		Slow water	0.99	Slow water	0.99
		movement		movement	
		Gravel	0.29	Gravel	0.29
		Dusty	0.02	Dusty	0.02
296339 Morris-----	75	Very limited		Very limited	
		Depth to	1.00	Large stones	1.00
		saturated zone		Depth to	1.00
		Large stones	1.00	saturated zone	
		Dusty	0.02	Dusty	0.02
296340 Morris-----	80	Very limited		Very limited	
		Depth to	1.00	Large stones	1.00
		saturated zone		Depth to	1.00
		Large stones	1.00	saturated zone	
		Slope	0.16	Slope	0.16
		Dusty	0.02	Dusty	0.02
296341 Freetown, mucky peat	100	Not rated		Not rated	
296342 Paupack, mucky peat (shallow)-----	100	Not rated		Not rated	
296343 Oquaga-----	50	Somewhat limited		Somewhat limited	
		Gravel	0.62	Gravel	0.62
		Dusty	0.02	Dusty	0.02
Lackawanna-----	35	Somewhat limited		Somewhat limited	
		Gravel	0.62	Gravel	0.62
		Depth to	0.24	Depth to	0.12
		saturated zone		saturated zone	
		Dusty	0.01	Dusty	0.01
296344 Oquaga-----	55	Somewhat limited		Somewhat limited	
		Slope	0.63	Slope	0.63
		Gravel	0.62	Gravel	0.62
		Dusty	0.02	Dusty	0.02
Lackawanna-----	30	Somewhat limited		Somewhat limited	
		Slope	0.63	Slope	0.63
		Gravel	0.62	Gravel	0.62
		Depth to	0.24	Depth to	0.12
		saturated zone		saturated zone	
		Dusty	0.01	Dusty	0.01

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7a.--Recreational Development, Part I (Camp and Picnic Areas)--Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
296346					
Oquaga-----	50	Very limited		Very limited	
		Large stones	1.00	Large stones	1.00
		Gravel	0.08	Gravel	0.08
		Dusty	0.02	Dusty	0.02
Lackawanna-----	35	Very limited		Very limited	
		Large stones	1.00	Large stones	1.00
		Depth to	0.24	Depth to	0.12
		saturated zone		saturated zone	
		Dusty	0.01	Dusty	0.01
296347					
Oquaga-----	60	Very limited		Very limited	
		Large stones	1.00	Large stones	1.00
		Slope	1.00	Slope	1.00
		Gravel	0.08	Gravel	0.08
		Dusty	0.02	Dusty	0.02
Lackawanna-----	30	Very limited		Very limited	
		Large stones	1.00	Large stones	1.00
		Slope	1.00	Slope	1.00
		Depth to	0.24	Depth to	0.12
		saturated zone		saturated zone	
		Dusty	0.01	Dusty	0.01
296348					
Philo-----	85	Very limited		Somewhat limited	
		Flooding	1.00	Flooding	0.40
		Depth to	0.07	Depth to	0.03
		saturated zone		saturated zone	
		Dusty	0.02	Dusty	0.02
296349					
Pope-----	90	Very limited		Somewhat limited	
		Flooding	1.00	Dusty	0.01
		Dusty	0.01		
296350					
Pope-----	90	Very limited		Somewhat limited	
		Flooding	1.00	Dusty	0.01
		Dusty	0.01		
296351					
Rexford, somewhat poorly drained----	40	Very limited		Very limited	
		Depth to	1.00	Depth to	1.00
		saturated zone		saturated zone	
		Slow water	0.96	Slow water	0.96
		movement		movement	
		Dusty	0.01	Dusty	0.01
Rexford, poorly drained-----	35	Very limited		Very limited	
		Depth to	1.00	Depth to	1.00
		saturated zone		saturated zone	
		Slow water	0.96	Slow water	0.96
		movement		movement	
		Dusty	0.01	Dusty	0.01

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7a.--Recreational Development, Part I (Camp and Picnic Areas)--Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
296355 Sheffield-----	100	Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00
		Ponding	1.00	Depth to saturated zone	1.00
		Slow water movement	0.21	Slow water movement	0.21
		Dusty	0.04	Dusty	0.04
296363 Dystrochrepts, very stony-----	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones	0.53	Large stones	0.53
		Gravel	0.07	Gravel	0.07
		Dusty	0.02	Dusty	0.02
296369 Wayland-----	100	Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00
		Flooding	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Slow water movement	0.96
		Slow water movement	0.96	Flooding	0.40
		Dusty	0.06	Dusty	0.06
296376 Wellsboro-----	80	Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.94
		Large stones	0.14	Large stones	0.14
		Dusty	0.01	Dusty	0.01
296379 Wellsboro-----	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Large stones	1.00
		Large stones	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	0.94
		Dusty	0.01	Dusty	0.01
296385 Wyoming-----	85	Somewhat limited		Somewhat limited	
		Gravel	0.76	Gravel	0.76
296386 Wyoming-----	85	Somewhat limited		Somewhat limited	
		Gravel	0.76	Gravel	0.76
296387 Wyoming-----	85	Somewhat limited		Somewhat limited	
		Gravel	0.76	Gravel	0.76
		Slope	0.63	Slope	0.63
296388 Wyoming-----	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Gravel	0.76	Gravel	0.76

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7a.--Recreational Development, Part I (Camp and Picnic Areas)--Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
296389 Wyoming-----	100	Very limited Slope Gravel	1.00 0.76	Very limited Slope Gravel	1.00 0.76
296390 Water-----	100	Not rated		Not rated	
297185 Edgemere-----	42	Not rated		Very limited Large stones Ponding Depth to saturated zone Dusty	1.00 1.00 1.00 0.01
Shohola-----	42	Very limited Depth to saturated zone Large stones Slope Dusty	1.00 1.00 0.04 0.01	Very limited Large stones Depth to saturated zone Slope Dusty	1.00 1.00 0.04 0.01
297186 Edgemere-----	75	Not rated		Very limited Large stones Ponding Depth to saturated zone Dusty	1.00 1.00 1.00 0.01
297188 Manlius-----	40	Very limited Slope Large stones Gravel Dusty	1.00 1.00 0.90 0.02	Very limited Large stones Slope Gravel Dusty	1.00 1.00 0.90 0.02
Arnot-----	35	Very limited Slope Large stones Depth to bedrock	1.00 1.00 1.00	Very limited Large stones Slope Depth to bedrock	1.00 1.00 1.00
Rock outcrop-----	15	Not rated		Not rated	
297189 Manlius-----	40	Very limited Slope Large stones Gravel Dusty	1.00 1.00 0.90 0.02	Very limited Large stones Slope Gravel Dusty	1.00 1.00 0.90 0.02
Arnot-----	35	Very limited Slope Large stones Depth to bedrock	1.00 1.00 1.00	Very limited Large stones Slope Depth to bedrock	1.00 1.00 1.00
Rock outcrop-----	15	Not rated		Not rated	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7a.--Recreational Development, Part I (Camp and Picnic Areas)--Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
297190 Braceville-----	82	Somewhat limited Depth to saturated zone	0.81	Somewhat limited Depth to saturated zone	0.48
297191 Wyalusing-----	85	Very limited Depth to saturated zone Flooding	1.00 1.00	Very limited Depth to saturated zone Flooding	1.00 0.40
297192 Pope-----	95	Very limited Flooding	1.00	Somewhat limited Flooding	0.40
297193 Paupack-----	90	Not rated		Not rated	
297196 Freetown-----	94	Not rated		Not rated	
297197 Manlius-----	90	Somewhat limited Large stones Gravel Dusty	0.53 0.19 0.02	Somewhat limited Large stones Gravel Dusty	0.53 0.19 0.02
297198 Manlius-----	86	Somewhat limited Slope Large stones Gravel Dusty	0.63 0.53 0.19 0.02	Somewhat limited Slope Large stones Gravel Dusty	0.63 0.53 0.19 0.02
297201 Oquaga-----	75	Very limited Slope Large stones Gravel Dusty	1.00 1.00 0.45 0.02	Very limited Large stones Slope Gravel Dusty	1.00 1.00 0.45 0.02
297203 Delaware-----	93	Very limited Flooding	1.00	Not limited	
297204 Delaware-----	82	Very limited Flooding	1.00	Not limited	
297205 Delaware-----	80	Very limited Flooding Slope	1.00 0.96	Somewhat limited Slope	0.96
297209 Philo-----	85	Very limited Flooding Depth to saturated zone Dusty	1.00 0.07 0.01	Somewhat limited Flooding Depth to saturated zone Dusty	0.40 0.03 0.01

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7a.--Recreational Development, Part I (Camp and Picnic Areas)--Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
297210 Barbour-----	85	Very limited Flooding Too sandy	1.00 0.01	Somewhat limited Too sandy	0.01
297216 Wurtsboro-----	92	Very limited Large stones Depth to saturated zone	1.00 0.95	Very limited Large stones Depth to saturated zone	1.00 0.68
297217 Wurtsboro-----	88	Very limited Large stones Depth to saturated zone Slope	1.00 0.95 0.63	Very limited Large stones Depth to saturated zone Slope	1.00 0.68 0.63
297227 Arnot-----	88	Very limited Gravel Depth to bedrock Slope Dusty	1.00 1.00 0.04 0.01	Very limited Gravel Depth to bedrock Slope Dusty	1.00 1.00 0.04 0.01
297228 Arnot-----	85	Very limited Slope Gravel Depth to bedrock Dusty	1.00 1.00 1.00 0.01	Very limited Slope Gravel Depth to bedrock Dusty	1.00 1.00 1.00 0.01
297229 Wyoming-----	90	Somewhat limited Large stones Gravel	0.08 0.06	Somewhat limited Large stones Gravel	0.08 0.06
297230 Wyoming-----	90	Somewhat limited Slope Large stones Gravel	0.63 0.08 0.06	Somewhat limited Slope Large stones Gravel	0.63 0.08 0.06
297231 Wyoming-----	90	Very limited Slope Large stones Gravel	1.00 0.08 0.06	Very limited Slope Large stones Gravel	1.00 0.08 0.06
297236 Suncook-----	91	Very limited Flooding Too sandy	1.00 0.59	Somewhat limited Too sandy	0.59
297237 Mardin-----	85	Very limited Depth to saturated zone Gravel Dusty	1.00 0.09 0.03	Somewhat limited Depth to saturated zone Gravel Dusty	0.94 0.09 0.03



# Soil Survey of Delaware Water Gap National Recreation Area

Table 7a.--Recreational Development, Part I (Camp and Picnic Areas)--Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
297238 Mardin-----	85	Very limited		Somewhat limited	
		Depth to	1.00	Depth to	0.94
		saturated zone		saturated zone	
		Slope	0.63	Slope	0.63
		Gravel	0.09	Gravel	0.09
		Dusty	0.03	Dusty	0.03
297239 Mardin-----	85	Very limited		Very limited	
		Depth to	1.00	Large stones	1.00
		saturated zone		Depth to	0.94
		Large stones	1.00	saturated zone	
		Dusty	0.02	Dusty	0.02
		Gravel	0.01	Gravel	0.01
297240 Mardin-----	85	Very limited		Very limited	
		Depth to	1.00	Large stones	1.00
		saturated zone		Depth to	0.94
		Large stones	1.00	saturated zone	
		Slope	0.63	Slope	0.63
		Dusty	0.02	Dusty	0.02
		Gravel	0.01	Gravel	0.01
297241 Unadilla-----	90	Somewhat limited		Somewhat limited	
		Dusty	0.02	Dusty	0.02
297242 Shohola-----	62	Very limited		Very limited	
		Depth to	1.00	Large stones	1.00
		saturated zone		Depth to	1.00
		Large stones	1.00	saturated zone	
		Dusty	0.01	Dusty	0.01
Edgemere-----	29	Not rated		Very limited	
				Large stones	1.00
				Ponding	1.00
				Depth to	1.00
				saturated zone	
297243 Shohola-----	62	Very limited		Very limited	
		Depth to	1.00	Large stones	1.00
		saturated zone		Depth to	1.00
		Large stones	1.00	saturated zone	
		Slope	0.63	Slope	0.63
		Dusty	0.01	Dusty	0.01
Edgemere-----	29	Not rated		Very limited	
				Large stones	1.00
				Ponding	1.00
				Depth to	1.00
				saturated zone	
				Slope	0.63
297244 Lordstown-----	40	Very limited		Very limited	
		Large stones	1.00	Large stones	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7a.--Recreational Development, Part I (Camp and Picnic Areas)--Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
297244 Swartswood-----	35	Very limited Large stones	1.00	Very limited Large stones	1.00
297247 Chenango-----	86	Somewhat limited Gravel	0.12	Somewhat limited Gravel	0.12
297248 Chenango-----	85	Somewhat limited Slope Gravel	0.63 0.12	Somewhat limited Slope Gravel	0.63 0.12
297249 Chenango-----	90	Very limited Slope Gravel	1.00 0.12	Very limited Slope Gravel	1.00 0.12
297253 Craigs ville-----	50	Very limited Flooding Large stones Dusty	1.00 1.00 0.01	Very limited Large stones Dusty	1.00 0.01
Wyoming-----	40	Very limited Large stones Gravel	1.00 0.06	Very limited Large stones Gravel	1.00 0.06
297254 Pits, shale-----	40	Not rated		Not rated	
Pits, gravel-----	40	Not rated		Not rated	
298049 Wurtsboro, extremely stony----	90	Very limited Large stones Depth to saturated zone	1.00 0.98	Very limited Large stones Depth to saturated zone	1.00 0.75
298050 Wurtsboro, extremely stony----	60	Very limited Large stones Depth to saturated zone	1.00 0.98	Very limited Large stones Depth to saturated zone	1.00 0.75
Swartswood, extremely stony----	40	Very limited Large stones	1.00	Very limited Large stones	1.00
298051 Wurtsboro, extremely stony----	60	Very limited Large stones Depth to saturated zone Slope	1.00 0.98 0.63	Very limited Large stones Depth to saturated zone Slope	1.00 0.75 0.63

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7a.--Recreational Development, Part I (Camp and Picnic Areas)--Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
298051 Swartswood, extremely stony----	40	Very limited Large stones Slope	1.00 0.63	Very limited Large stones Slope	1.00 0.63
298075 Colonie-----	80	Somewhat limited Too sandy	0.19	Somewhat limited Too sandy	0.19
298188 Lackawanna, extremely stony----	85	Very limited Slope Large stones Dusty	1.00 1.00 0.01	Very limited Large stones Slope Dusty	1.00 1.00 0.01
298189 Lackawanna, extremely stony----	85	Very limited Large stones Slope Dusty	1.00 0.63 0.01	Very limited Large stones Slope Dusty	1.00 0.63 0.01
298221 Swartswood, extremely stony----	90	Very limited Large stones	1.00	Very limited Large stones	1.00
298222 Swartswood, extremely stony----	90	Very limited Large stones Slope	1.00 0.63	Very limited Large stones Slope	1.00 0.63
298223 Swartswood, extremely stony----	85	Very limited Slope Large stones	1.00 1.00	Very limited Large stones Slope	1.00 1.00
298255 Delaware, rarely flooded-----	80	Very limited Flooding	1.00	Not limited	
298256 Delaware, rarely flooded-----	80	Very limited Flooding	1.00	Not limited	
298257 Wallpack-----	85	Somewhat limited Slope Dusty	0.63 0.02	Somewhat limited Slope Dusty	0.63 0.02
298258 Wallpack-----	85	Very limited Slope Dusty	1.00 0.02	Very limited Slope Dusty	1.00 0.02

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7a.--Recreational Development, Part I (Camp and Picnic Areas)--Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
298259 Wallpack, extremely stony-----	85	Very limited Large stones Dusty	1.00 0.02	Very limited Large stones Dusty	1.00 0.02
298260 Wallpack, extremely stony-----	85	Very limited Large stones Slope Dusty	1.00 0.63 0.02	Very limited Large stones Slope Dusty	1.00 0.63 0.02
298261 Wallpack-----	85	Somewhat limited Dusty	0.02	Somewhat limited Dusty	0.02
298262 Wallpack, extremely stony-----	85	Very limited Slope Large stones Dusty	1.00 1.00 0.02	Very limited Large stones Slope Dusty	1.00 1.00 0.02
298265 Venango, extremely stony-----	90	Very limited Depth to saturated zone Large stones Dusty	1.00 1.00 0.02	Very limited Large stones Depth to saturated zone Dusty	1.00 1.00 0.02
298266 Venango, extremely stony-----	85	Very limited Depth to saturated zone Large stones Slope Dusty	1.00 1.00 0.63 0.02	Very limited Large stones Depth to saturated zone Slope Dusty	1.00 1.00 0.63 0.02
298409 Swartswood, extremely stony----	90	Very limited Large stones	1.00	Very limited Large stones	1.00
298411 Swartswood, extremely stony----	90	Very limited Large stones Slope	1.00 0.63	Very limited Large stones Slope	1.00 0.63
298413 Swartswood, extremely stony----	85	Very limited Slope Large stones	1.00 1.00	Very limited Large stones Slope	1.00 1.00
318498 Hazen, very stony---	60	Somewhat limited Large stones	0.19	Somewhat limited Large stones	0.19

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7a.--Recreational Development, Part I (Camp and Picnic Areas)--Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
318498 Hoosic, very stony--	35	Somewhat limited Large stones	0.19	Somewhat limited Gravel Large stones	0.61 0.19
318533 Hazen, very stony---	50	Somewhat limited Large stones	0.19	Somewhat limited Large stones	0.19
Hoosic, very stony--	40	Somewhat limited Large stones	0.19	Somewhat limited Gravel Large stones	0.61 0.19
319783 Catden-----	85	Not rated		Not rated	
319784 Fredon, very stony--	50	Very limited Depth to saturated zone Large stones Dusty	1.00 0.19 0.02	Somewhat limited Depth to saturated zone Large stones Dusty	0.96 0.19 0.02
Halsey, very stony--	40	Very limited Depth to saturated zone Ponding Large stones Dusty	1.00 1.00 0.19 0.02	Very limited Ponding Depth to saturated zone Large stones Dusty	1.00 1.00 0.19 0.02
543222 Andover, extremely stony-----	55	Very limited Depth to saturated zone Large stones Dusty	1.00 1.00 0.03	Very limited Large stones Depth to saturated zone Dusty	1.00 1.00 0.03
Buchanan, extremely stony-----	40	Very limited Large stones Depth to saturated zone Dusty Gravel	1.00 0.81 0.03 0.01	Very limited Large stones Depth to saturated zone Dusty Gravel	1.00 0.48 0.03 0.01
543243 Berks-----	65	Very limited Slope Gravel Dusty	1.00 0.46 0.04	Very limited Slope Gravel Dusty	1.00 0.46 0.04
Weikert-----	25	Very limited Slope Depth to bedrock Gravel Dusty	1.00 1.00 0.92 0.04	Very limited Slope Depth to bedrock Gravel Dusty	1.00 1.00 0.92 0.04

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7a.--Recreational Development, Part I (Camp and Picnic Areas)--Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
543246 Buchanan-----	75	Somewhat limited		Somewhat limited	
		Depth to	0.81	Gravel	0.54
		saturated zone		Depth to	0.48
		Gravel	0.54	saturated zone	
		Dusty	0.03	Dusty	0.03
543247 Buchanan, extremely stony-----	80	Very limited		Very limited	
		Large stones	1.00	Large stones	1.00
		Depth to	0.81	Gravel	0.54
		saturated zone		Depth to	0.48
		Gravel	0.54	saturated zone	
		Dusty	0.03	Dusty	0.03
543257 Chippewa-----	90	Very limited		Very limited	
		Depth to	1.00	Depth to	1.00
		saturated zone		saturated zone	
		Dusty	0.03	Dusty	0.03
543258 Chippewa-----	90	Very limited		Very limited	
		Depth to	1.00	Depth to	1.00
		saturated zone		saturated zone	
		Dusty	0.03	Dusty	0.03
543259 Chippewa, extremely stony-----	90	Very limited		Very limited	
		Depth to	1.00	Large stones	1.00
		saturated zone		Depth to	1.00
		Large stones	1.00	saturated zone	
		Dusty	0.03	Dusty	0.03
543271 Delaware-----	90	Very limited		Not limited	
		Flooding	1.00		
543276 Fluvaquents-----	85	Very limited		Very limited	
		Depth to	1.00	Depth to	1.00
		saturated zone		saturated zone	
		Flooding	1.00	Slow water	0.43
		Slow water	0.43	movement	
		movement		Flooding	0.40
		Dusty	0.03	Dusty	0.03
543292 Hazleton, extremely stony-----	90	Very limited		Very limited	
		Large stones	1.00	Large stones	1.00
		Slope	1.00	Slope	1.00
		Gravel	0.01	Gravel	0.01
		Dusty	0.02	Dusty	0.02

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7a.--Recreational Development, Part I (Camp and Picnic Areas)--Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
543293 Hazleton, extremely stony-----	90	Very limited		Very limited	
		Slope	1.00	Large stones	1.00
		Large stones	1.00	Slope	1.00
		Gravel	0.01	Gravel	0.01
		Dusty	0.02	Dusty	0.02
543299 Laidig, extremely stony-----	90	Very limited		Very limited	
		Large stones	1.00	Large stones	1.00
		Gravel	0.16	Gravel	0.16
		Dusty	0.06	Dusty	0.06
543300 Laidig, extremely stony-----	90	Very limited		Very limited	
		Large stones	1.00	Large stones	1.00
		Slope	1.00	Slope	1.00
		Gravel	0.16	Gravel	0.16
		Dusty	0.06	Dusty	0.06
543304 Laidig-----	50	Very limited		Very limited	
		Slope	1.00	Large stones	1.00
		Large stones	1.00	Slope	1.00
		Gravel	0.16	Gravel	0.16
		Dusty	0.06	Dusty	0.06
Rubble land-----	40	Not rated		Not rated	
543318 Rubble land-----	75	Not rated		Not rated	
543327 Swartswood-----	90	Somewhat limited		Somewhat limited	
		Gravel	0.24	Gravel	0.24
		Dusty	0.01	Dusty	0.01
543328 Swartswood-----	90	Somewhat limited		Somewhat limited	
		Slope	0.63	Slope	0.63
		Gravel	0.24	Gravel	0.24
		Dusty	0.01	Dusty	0.01
543330 Swartswood, extremely stony----	50	Very limited		Very limited	
		Large stones	1.00	Large stones	1.00
		Gravel	0.01	Gravel	0.01
		Dusty	0.01	Dusty	0.01
Wurtsboro, extremely stony----	30	Very limited		Very limited	
		Large stones	1.00	Large stones	1.00
		Depth to saturated zone	0.39	Depth to saturated zone	0.19
		Dusty	0.01	Dusty	0.01

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7a.--Recreational Development, Part I (Camp and Picnic Areas)--Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
543331 Swartswood, extremely stony----	50	Very limited Large stones Slope Gravel Dusty	 1.00 1.00 0.01 0.01	Very limited Large stones Slope Gravel Dusty	 1.00 1.00 0.01 0.01
Wurtsboro, extremely stony----	30	Very limited Large stones Slope Depth to saturated zone Dusty	 1.00 1.00 0.39 0.01	Very limited Large stones Slope Depth to saturated zone Dusty	 1.00 1.00 0.19 0.01
543359 Volusia-----	85	Very limited Depth to saturated zone Dusty Gravel	 1.00 0.03 0.01	Very limited Depth to saturated zone Dusty Gravel	 1.00 0.03 0.01
543360 Volusia, extremely stony-----	85	Very limited Depth to saturated zone Large stones Dusty	 1.00 1.00 0.03	Very limited Large stones Depth to saturated zone Dusty	 1.00 1.00 0.03
543374 Wurtsboro-----	90	Somewhat limited Depth to saturated zone Gravel Dusty	 0.39 0.04 0.01	Somewhat limited Depth to saturated zone Gravel Dusty	 0.19 0.04 0.01
543375 Wurtsboro-----	90	Somewhat limited Slope Depth to saturated zone Gravel Dusty	 0.63 0.39 0.04 0.01	Somewhat limited Slope Depth to saturated zone Gravel Dusty	 0.63 0.19 0.04 0.01
612280 Scio-----	80	Somewhat limited Depth to saturated zone Dusty	 0.77 0.02	Somewhat limited Depth to saturated zone Dusty	 0.43 0.02
612666 Colonie-----	80	Somewhat limited Too sandy	 0.19	Somewhat limited Too sandy	 0.19
612668 Hoosic, very stony--	60	Somewhat limited Slope Large stones	 0.63 0.19	Somewhat limited Slope Gravel Large stones	 0.63 0.61 0.19



# Soil Survey of Delaware Water Gap National Recreation Area

Table 7a.--Recreational Development, Part I (Camp and Picnic Areas)--Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
612668 Hazen, very stony---	30	Somewhat limited Slope Large stones	0.63 0.19	Somewhat limited Slope Large stones	0.63 0.19
612724 Lordstown, very rocky-----	50	Very limited Slope Large stones Dusty	1.00 1.00 0.01	Very limited Large stones Slope Dusty	1.00 1.00 0.01
Wallpack, very rocky	40	Very limited Slope Large stones Dusty	1.00 1.00 0.02	Very limited Large stones Slope Dusty	1.00 1.00 0.02
612732 Atherton, very poorly drained-----	60	Very limited Depth to saturated zone Ponding Dusty	1.00 1.00 0.02	Very limited Ponding Depth to saturated zone Dusty	1.00 1.00 0.02
Atherton, poorly drained-----	30	Very limited Depth to saturated zone Dusty	1.00 0.01	Very limited Depth to saturated zone Dusty	1.00 0.01
612738 Fluvaquents, occasionally flooded-----	90	Very limited Depth to saturated zone Flooding Dusty	1.00 1.00 0.01	Very limited Depth to saturated zone Dusty	1.00 0.01
612753 Wallpack, aeolian mantle, very stony-	85	Somewhat limited Slope Large stones	0.63 0.19	Somewhat limited Slope Large stones	0.63 0.19
612756 Wallpack, aeolian mantle, very stony-	85	Somewhat limited Large stones	0.19	Somewhat limited Large stones	0.19
612757 Wallpack, aeolian mantle, very stony-	85	Very limited Slope Large stones	1.00 0.19	Very limited Slope Large stones	1.00 0.19

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7a.--Recreational Development, Part I (Camp and Picnic Areas)--Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
612767 Wellsboro, extremely stony----	85	Very limited Large stones Slope Depth to saturated zone Dusty	 1.00 0.63 0.39  0.02	Very limited Large stones Slope Depth to saturated zone Dusty	 1.00 0.63 0.19  0.02
612768 Wellsboro, extremely stony----	85	Very limited Large stones Depth to saturated zone Dusty	 1.00 0.39  0.02	Very limited Large stones Depth to saturated zone Dusty	 1.00 0.19  0.02
613393 Alden, extremely stony-----	90	Very limited Depth to saturated zone Ponding Large stones Slow water movement Dusty	 1.00  1.00 1.00 0.26  0.02	Very limited Large stones Ponding Depth to saturated zone Slow water movement Dusty	 1.00 1.00 1.00  0.26  0.02
613447 Unadilla-----	85	Somewhat limited Dusty	 0.02	Somewhat limited Dusty	 0.02
613448 Unadilla-----	85	Somewhat limited Dusty	 0.02	Somewhat limited Dusty	 0.02
614075 Wurtsboro, extremely stony----	80	Very limited Slope Large stones Depth to saturated zone	 1.00 1.00 0.98  	Very limited Large stones Slope Depth to saturated zone	 1.00 1.00 0.75  
Swartswood, extremely stony----	20	Very limited Slope Large stones	 1.00 1.00	Very limited Large stones Slope	 1.00 1.00
620179 Arnot, very rocky---	55	Very limited Large stones Depth to bedrock Dusty	 1.00 1.00 0.01	Very limited Large stones Depth to bedrock Dusty	 1.00 1.00 0.01
Lordstown, very rocky-----	40	Very limited Large stones Dusty	 1.00 0.01	Very limited Large stones Dusty	 1.00 0.01

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7a.--Recreational Development, Part I (Camp and Picnic Areas)--Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
620180					
Arnot-----	45	Very limited		Very limited	
		Slope	1.00	Large stones	1.00
		Large stones	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Dusty	0.01	Dusty	0.01
Lordstown-----	40	Very limited		Very limited	
		Slope	1.00	Large stones	1.00
		Large stones	1.00	Slope	1.00
		Dusty	0.01	Dusty	0.01
Rock outcrop-----	15	Not rated		Not rated	
620181					
Arnot-----	60	Very limited		Very limited	
		Slope	1.00	Large stones	1.00
		Large stones	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Dusty	0.01	Dusty	0.01
Lordstown-----	25	Very limited		Very limited	
		Slope	1.00	Large stones	1.00
		Large stones	1.00	Slope	1.00
		Dusty	0.01	Dusty	0.01
Rock outcrop-----	15	Not rated		Not rated	
623089					
Chippewa, extremely stony-----	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Large stones	1.00
		Ponding	1.00	Ponding	1.00
		Large stones	1.00	Depth to saturated zone	1.00
		Dusty	0.02	Dusty	0.02
623109					
Farmington-----	50	Very limited		Very limited	
		Large stones	1.00	Large stones	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Dusty	0.02	Dusty	0.02
Rock outcrop-----	40	Not rated		Not rated	
624811					
Galway, very rocky--	80	Very limited		Very limited	
		Slope	1.00	Large stones	1.00
		Large stones	1.00	Slope	1.00
		Dusty	0.01	Dusty	0.01
624813					
Lackawanna, extremely stony----	85	Very limited		Very limited	
		Large stones	1.00	Large stones	1.00
		Dusty	0.01	Dusty	0.01

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7a.--Recreational Development, Part I (Camp and Picnic Areas)--Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
624816 Lordstown, very rocky-----	50	Very limited Large stones Slope Dusty	 1.00 0.63 0.01	Very limited Large stones Slope Dusty	 1.00 0.63 0.01
Wallpack, very rocky	35	Very limited Large stones Slope Dusty	 1.00 0.63 0.02	Very limited Large stones Slope Dusty	 1.00 0.63 0.02
624822 Lordstown-----	50	Very limited Slope Dusty	 1.00 0.01	Very limited Slope Dusty	 1.00 0.01
Wallpack-----	35	Very limited Slope Dusty	 1.00 0.02	Very limited Slope Dusty	 1.00 0.02
624823 Lordstown-----	50	Somewhat limited Slope Dusty	 0.63 0.01	Somewhat limited Slope Dusty	 0.63 0.01
Wallpack-----	35	Somewhat limited Slope Dusty	 0.63 0.02	Somewhat limited Slope Dusty	 0.63 0.02
624824 Lordstown-----	50	Somewhat limited Dusty	 0.01	Somewhat limited Dusty	 0.01
Wallpack-----	35	Somewhat limited Dusty	 0.02	Somewhat limited Dusty	 0.02
624826 Manlius, very rocky--	60	Very limited Slope Large stones Dusty	 1.00 1.00 0.02	Very limited Large stones Slope Gravel Dusty	 1.00 1.00 0.02 0.02
Nassau, very rocky--	25	Very limited Slope Large stones Depth to bedrock Dusty	 1.00 1.00 1.00 0.02	Very limited Large stones Slope Depth to bedrock Dusty	 1.00 1.00 1.00 0.02
624827 Nassau, very rocky--	55	Very limited Large stones Depth to bedrock Dusty	 1.00 1.00 0.02	Very limited Large stones Depth to bedrock Dusty	 1.00 1.00 0.02
Manlius, very rocky--	44	Very limited Large stones Gravel Dusty	 1.00 0.02 0.02	Very limited Large stones Gravel Dusty	 1.00 0.02 0.02

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7a.--Recreational Development, Part I (Camp and Picnic Areas)--Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
624828					
Nassau, very rocky--	55	Very limited		Very limited	
		Large stones	1.00	Large stones	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	0.63	Slope	0.63
		Dusty	0.02	Dusty	0.02
Manlius, very rocky-	44	Very limited		Very limited	
		Large stones	1.00	Large stones	1.00
		Slope	0.63	Slope	0.63
		Gravel	0.02	Gravel	0.02
		Dusty	0.02	Dusty	0.02
624829					
Nassau, very rocky--	55	Very limited		Very limited	
		Slope	1.00	Large stones	1.00
		Large stones	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Dusty	0.02	Dusty	0.02
Manlius, very rocky-	44	Very limited		Very limited	
		Slope	1.00	Large stones	1.00
		Large stones	1.00	Slope	1.00
		Gravel	0.02	Gravel	0.02
		Dusty	0.02	Dusty	0.02
624832					
Nassau-----	50	Very limited		Very limited	
		Slope	1.00	Large stones	1.00
		Large stones	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Dusty	0.02	Dusty	0.02
Rock outcrop-----	45	Not rated		Not rated	
624841					
Oquaga-----	60	Very limited		Very limited	
		Slope	1.00	Large stones	1.00
		Large stones	1.00	Slope	1.00
		Dusty	0.01	Dusty	0.01
Rock outcrop-----	25	Not rated		Not rated	
624845					
Rock outcrop-----	45	Not rated		Not rated	
Farmington-----	35	Very limited		Very limited	
		Slope	1.00	Large stones	1.00
		Large stones	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Dusty	0.02	Dusty	0.02
Galway-----	20	Very limited		Very limited	
		Slope	1.00	Large stones	1.00
		Large stones	1.00	Slope	1.00
		Dusty	0.01	Dusty	0.01
624846					
Rock outcrop-----	40	Not rated		Not rated	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7a.--Recreational Development, Part I (Camp and Picnic Areas)--Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
624846 Arnot-----	30	Very limited Slope Large stones Depth to bedrock Dusty	 1.00 1.00 1.00 0.01	Very limited Large stones Slope Depth to bedrock Dusty	 1.00 1.00 1.00 0.01
Rubble land-----	20	Not rated		Not rated	
626816 Udifluvents, occasionally flooded-----	90	Very limited Flooding Too sandy	 1.00 0.76	Somewhat limited Too sandy	 0.76
635458 Oquaga, very rocky--	55	Very limited Large stones Slope Dusty	 1.00 0.63 0.01	Very limited Large stones Slope Dusty	 1.00 0.63 0.01
Lackawanna, very rocky-----	30	Very limited Large stones Slope Dusty	 1.00 0.63 0.01	Very limited Large stones Slope Dusty	 1.00 0.63 0.01
635459 Oquaga, very rocky--	50	Very limited Slope Large stones Dusty	 1.00 1.00 0.01	Very limited Large stones Slope Dusty	 1.00 1.00 0.01
Lackawanna, very rocky-----	35	Very limited Slope Large stones Dusty	 1.00 1.00 0.01	Very limited Large stones Slope Dusty	 1.00 1.00 0.01
740953 Delaware, rarely flooded-----	80	Very limited Flooding	 1.00	Not limited	
740968 Nassau, very rocky--	55	Very limited Large stones Depth to bedrock Slope Dusty	 1.00 1.00 0.63 0.02	Very limited Large stones Depth to bedrock Slope Dusty	 1.00 1.00 0.63 0.02
Manlius, very rocky-	44	Very limited Large stones Slope Gravel Dusty	 1.00 0.63 0.02 0.02	Very limited Large stones Slope Gravel Dusty	 1.00 0.63 0.02 0.02

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7a.--Recreational Development, Part I (Camp and Picnic Areas)--Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
740969					
Nassau, very rocky--	55	Very limited		Very limited	
		Slope	1.00	Large stones	1.00
		Large stones	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Dusty	0.02	Dusty	0.02
Manlius, very rocky-	44	Very limited		Very limited	
		Slope	1.00	Large stones	1.00
		Large stones	1.00	Slope	1.00
		Gravel	0.02	Gravel	0.02
		Dusty	0.02	Dusty	0.02
740971					
Oquaga, very rocky--	55	Very limited		Very limited	
		Large stones	1.00	Large stones	1.00
		Slope	0.63	Slope	0.63
		Dusty	0.01	Dusty	0.01
Lackawanna, very rocky-----	30	Very limited		Very limited	
		Large stones	1.00	Large stones	1.00
		Slope	0.63	Slope	0.63
		Dusty	0.01	Dusty	0.01
740972					
Oquaga, very rocky--	50	Very limited		Very limited	
		Slope	1.00	Large stones	1.00
		Large stones	1.00	Slope	1.00
		Dusty	0.01	Dusty	0.01
Lackawanna, very rocky-----	35	Very limited		Very limited	
		Slope	1.00	Large stones	1.00
		Large stones	1.00	Slope	1.00
		Dusty	0.01	Dusty	0.01
740974					
Oquaga-----	60	Very limited		Very limited	
		Slope	1.00	Large stones	1.00
		Large stones	1.00	Slope	1.00
		Dusty	0.01	Dusty	0.01
Rock outcrop-----	25	Not rated		Not rated	
740975					
Rock outcrop-----	40	Not rated		Not rated	
Arnot-----	30	Very limited		Very limited	
		Slope	1.00	Large stones	1.00
		Large stones	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Dusty	0.01	Dusty	0.01
Rubble land-----	20	Not rated		Not rated	
740987					
Scio-----	80	Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.77	Depth to saturated zone	0.43
		Dusty	0.02	Dusty	0.02

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7a.--Recreational Development, Part I (Camp and Picnic Areas)--Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
740988 Udifluvents, occasionally flooded-----	90	Very limited Flooding Too sandy	1.00 0.76	Somewhat limited Too sandy	0.76
740991 Unadilla-----	85	Somewhat limited Dusty	0.02	Somewhat limited Dusty	0.02
740992 Unadilla-----	85	Somewhat limited Dusty	0.02	Somewhat limited Dusty	0.02
740995 Wellsboro, extremely stony----	85	Very limited Large stones Depth to saturated zone Dusty	1.00 0.39 0.02	Very limited Large stones Depth to saturated zone Dusty	1.00 0.19 0.02
740996 Wellsboro, extremely stony----	85	Very limited Large stones Slope Depth to saturated zone Dusty	1.00 0.63 0.39 0.02	Very limited Large stones Slope Depth to saturated zone Dusty	1.00 0.63 0.19 0.02
741149 Lackawanna, extremely stony----	85	Very limited Large stones Slope Dusty	1.00 0.63 0.01	Very limited Large stones Slope Dusty	1.00 0.63 0.01
741150 Lackawanna, extremely stony----	85	Very limited Slope Large stones Dusty	1.00 1.00 0.01	Very limited Large stones Slope Dusty	1.00 1.00 0.01
801114 Oquaga-----	75	Very limited Large stones Dusty	1.00 0.01	Very limited Large stones Dusty	1.00 0.01
Rock outcrop-----	15	Not rated		Not rated	
810906 Oquaga-----	75	Very limited Large stones Dusty	1.00 0.01	Very limited Large stones Dusty	1.00 0.01
Rock outcrop-----	15	Not rated		Not rated	



# Soil Survey of Delaware Water Gap National Recreation Area

Table 7a.--Recreational Development, Part I (Camp and Picnic Areas)--Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1147465 Alden, extremely stony-----	90	Very limited Depth to saturated zone Ponding Large stones Slow water movement Dusty	1.00 1.00 1.00 0.26 0.02	Very limited Large stones Ponding Depth to saturated zone Slow water movement Dusty	1.00 1.00 1.00 0.26 0.02
1147467 Arnot, very rocky---	55	Very limited Large stones Depth to bedrock Dusty	1.00 1.00 0.01	Very limited Large stones Depth to bedrock Dusty	1.00 1.00 0.01
Lordstown, very rocky-----	40	Very limited Large stones Dusty	1.00 0.01	Very limited Large stones Dusty	1.00 0.01
1147468 Arnot-----	45	Very limited Slope Large stones Depth to bedrock Dusty	1.00 1.00 1.00 0.01	Very limited Large stones Slope Depth to bedrock Dusty	1.00 1.00 1.00 0.01
Lordstown-----	40	Very limited Slope Large stones Dusty	1.00 1.00 0.01	Very limited Large stones Slope Dusty	1.00 1.00 0.01
Rock outcrop-----	15	Not rated		Not rated	
1147469 Arnot-----	60	Very limited Slope Large stones Depth to bedrock Dusty	1.00 1.00 1.00 0.01	Very limited Large stones Slope Depth to bedrock Dusty	1.00 1.00 1.00 0.01
Lordstown-----	25	Very limited Slope Large stones Dusty	1.00 1.00 0.01	Very limited Large stones Slope Dusty	1.00 1.00 0.01
Rock outcrop-----	15	Not rated		Not rated	
1147470 Atherton, very poorly drained----	60	Very limited Depth to saturated zone Ponding Dusty	1.00 1.00 1.00 0.02	Very limited Ponding Depth to saturated zone Dusty	1.00 1.00 0.02

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7a.--Recreational Development, Part I (Camp and Picnic Areas)--Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1147470 Atherton, poorly drained-----	30	Very limited Depth to saturated zone Dusty	1.00  0.01	Very limited Depth to saturated zone Dusty	1.00  0.01
1147471 Catden-----	85	Not rated		Not rated	
1147474 Chippewa, extremely stony-----	80	Very limited Depth to saturated zone Ponding Large stones Dusty	1.00  1.00 1.00 0.02	Very limited Large stones Ponding Depth to saturated zone Dusty	1.00 1.00 1.00  0.02
1147475 Colonie-----	80	Somewhat limited Too sandy	0.19	Somewhat limited Too sandy	0.19
1147478 Delaware, rarely flooded-----	80	Very limited Flooding	1.00	Not limited	
1147482 Fredon, very stony--	50	Very limited Depth to saturated zone Large stones Dusty	1.00  0.19 0.02	Somewhat limited Depth to saturated zone Large stones Dusty	0.96  0.19 0.02
Halsey, very stony--	40	Very limited Depth to saturated zone Ponding Large stones Dusty	1.00  1.00 0.19 0.02	Very limited Ponding Depth to saturated zone Large stones Dusty	1.00 1.00  0.19 0.02
1147485 Hazen, very stony---	60	Somewhat limited Large stones	0.19	Somewhat limited Large stones	0.19
Hoosic, very stony--	35	Somewhat limited Large stones	0.19	Somewhat limited Gravel Large stones	0.61 0.19
1147490 Hoosic, very stony--	60	Somewhat limited Slope Large stones	0.63 0.19	Somewhat limited Slope Gravel Large stones	0.63 0.61 0.19
Hazen, very stony---	30	Somewhat limited Slope Large stones	0.63 0.19	Somewhat limited Slope Large stones	0.63 0.19

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7a.--Recreational Development, Part I (Camp and Picnic Areas)--Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1147491 Hoosic, very stony--	50	Very limited Slope Large stones	1.00 0.19	Very limited Slope Gravel Large stones	1.00 0.61 0.19
Otisville, very stony-----	40	Very limited Slope Large stones	1.00 0.19	Very limited Slope Gravel Large stones	1.00 0.84 0.19
1147492 Lackawanna, extremely stony----	85	Very limited Large stones Dusty	1.00 0.01	Very limited Large stones Dusty	1.00 0.01
1147500 Wurtsboro, extremely stony----	90	Very limited Large stones Depth to saturated zone	1.00 0.98	Very limited Large stones Depth to saturated zone	1.00 0.75
1147501 Wurtsboro, extremely stony----	60	Very limited Large stones Depth to saturated zone	1.00 0.98	Very limited Large stones Depth to saturated zone	1.00 0.75
Swartswood, extremely stony----	40	Very limited Large stones	1.00	Very limited Large stones	1.00
1147502 Wurtsboro, extremely stony----	60	Very limited Large stones Depth to saturated zone Slope	1.00 0.98 0.63	Very limited Large stones Depth to saturated zone Slope	1.00 0.75 0.63
Swartswood, extremely stony----	40	Very limited Large stones Slope	1.00 0.63	Very limited Large stones Slope	1.00 0.63
1147527 Udorthents-----	60	Somewhat limited Slow water movement	0.96	Somewhat limited Slow water movement	0.96
Urban land-----	40	Not rated		Not rated	
1147532 Udorthents-----	100	Somewhat limited Slow water movement	0.96	Somewhat limited Slow water movement	0.96

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7a.--Recreational Development, Part I (Camp and Picnic Areas)--Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1147533 Wurtsboro, extremely stony----	80	Very limited Slope Large stones Depth to saturated zone	1.00 1.00 0.98	Very limited Large stones Slope Depth to saturated zone	1.00 1.00 0.75
Swartswood, extremely stony----	20	Very limited Slope Large stones	1.00 1.00	Very limited Large stones Slope	1.00 1.00
1948749 Arnot-----	90	Very limited Depth to bedrock Gravel Dusty	1.00 0.08 0.02	Very limited Depth to bedrock Gravel Dusty	1.00 0.08 0.02
1948750 Arnot-----	90	Very limited Depth to bedrock Slope Gravel Dusty	1.00 0.63 0.08 0.02	Very limited Depth to bedrock Slope Gravel Dusty	1.00 0.63 0.08 0.02
1948751 Arnot-----	90	Very limited Slope Depth to bedrock Gravel Dusty	1.00 1.00 0.08 0.02	Very limited Slope Depth to bedrock Gravel Dusty	1.00 1.00 0.08 0.02
1948774 Conotton-----	90	Somewhat limited Gravel Dusty	0.41 0.04	Somewhat limited Gravel Dusty	0.41 0.04
1948775 Conotton-----	95	Somewhat limited Slope Gravel Dusty	0.63 0.41 0.04	Somewhat limited Slope Gravel Dusty	0.63 0.41 0.04
1948776 Conotton-----	95	Very limited Slope Gravel Dusty	1.00 0.41 0.04	Very limited Slope Gravel Dusty	1.00 0.41 0.04
1948777 Conotton-----	95	Very limited Slope Gravel Dusty	1.00 0.41 0.04	Very limited Slope Gravel Dusty	1.00 0.41 0.04
1948797 Manlius-----	90	Somewhat limited Gravel Dusty	0.15 0.03	Somewhat limited Gravel Dusty	0.15 0.03

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7a.--Recreational Development, Part I (Camp and Picnic Areas)--Continued

Map unit symbol and soil name	Pct. of map unit	Camp areas		Picnic areas	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1948802 Manlius-----	90	Somewhat limited Slope Gravel Dusty	0.63 0.15 0.03	Somewhat limited Slope Gravel Dusty	0.63 0.15 0.03
1948818 Manlius-----	90	Very limited Slope Gravel Dusty	1.00 0.15 0.03	Very limited Slope Gravel Dusty	1.00 0.15 0.03
1948832 Penargyl-----	90	Somewhat limited Dusty Gravel	0.04 0.01	Somewhat limited Dusty Gravel	0.04 0.01
1948846 Phelps-----	90	Somewhat limited Depth to saturated zone Dusty Gravel	0.77 0.02 0.01	Somewhat limited Depth to saturated zone Dusty Gravel	0.43 0.02 0.01
1948855 Udorthents, loamy---	95	Somewhat limited Depth to saturated zone Dusty	0.81 0.03	Somewhat limited Depth to saturated zone Dusty	0.48 0.03
1948989 Urban land-----	65	Not rated		Not rated	
Delaware-----	25	Very limited Flooding Dusty	1.00 0.01	Somewhat limited Dusty	0.01

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7b.--Recreational Development, Part II (Trail Management)

[Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map unit symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
290836 Hoosic, very stony--	50	Very limited Slope Large stones	1.00 0.19	Very limited Slope Large stones	1.00 0.19
Otisville, very stony-----	40	Very limited Slope Large stones	1.00 0.19	Very limited Slope Large stones	1.00 0.19
296265 Alden-----	100	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
296269 Fluvents, (alluvial land)-----	70	Somewhat limited Depth to saturated zone Flooding	0.44 0.40	Somewhat limited Depth to saturated zone Flooding	0.44 0.40
296271 Alvira-----	55	Very limited Depth to saturated zone Large stones	1.00 0.53	Very limited Depth to saturated zone Large stones	1.00 0.53
Watson-----	35	Somewhat limited Large stones Depth to saturated zone	0.53 0.44	Somewhat limited Large stones Depth to saturated zone	0.53 0.44
296272 Bath-----	85	Not limited		Not limited	
296273 Bath-----	85	Not limited		Not limited	
296274 Bath-----	85	Somewhat limited Slope	0.50	Not limited	
296275 Bath-----	90	Very limited Large stones	1.00	Very limited Large stones	1.00
296276 Bath-----	90	Very limited Large stones Slope	1.00 0.08	Very limited Large stones	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7b.--Recreational Development, Part II (Trail Management)--Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
296277 Benson-----	55	Not limited		Not limited	
296278 Benson-----	60	Somewhat limited Slope	0.08	Not limited	
Rock outcrop-----	20	Not rated		Not rated	
296279 Benson-----	60	Very limited Slope	1.00	Very limited Slope	1.00
Rock outcrop-----	25	Not rated		Not rated	
296280 Braceville-----	90	Not limited		Not limited	
296281 Braceville-----	90	Not limited		Not limited	
296283 Buchanan-----	90	Very limited Large stones	1.00	Very limited Large stones	1.00
296288 Chippewa-----	48	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
Norwich-----	48	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
296289 Chippewa-----	47	Very limited Large stones Depth to saturated zone	1.00 1.00	Very limited Large stones Depth to saturated zone	1.00 1.00
Norwich-----	47	Very limited Large stones Depth to saturated zone	1.00 1.00	Very limited Large stones Depth to saturated zone	1.00 1.00
296295 Udorthents, cut and fill-----	90	Not rated		Not rated	
296297 Dekalb-----	100	Very limited Large stones Slope	1.00 0.08	Very limited Large stones	1.00
296298 Dekalb-----	100	Very limited Large stones Slope	1.00 1.00	Very limited Large stones Slope	1.00 1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7b.--Recreational Development, Part II (Trail Management)--Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
296303 Hazleton-----	100	Very limited Large stones Slope	1.00 0.08	Very limited Large stones	1.00
296304 Holly-----	100	Very limited Depth to saturated zone Flooding	1.00 0.40	Very limited Depth to saturated zone Flooding	1.00 0.40
296311 Lackawanna-----	40	Very limited Large stones Slope	1.00 1.00	Very limited Large stones Slope	1.00 1.00
Bath-----	30	Very limited Large stones Slope	1.00 1.00	Very limited Large stones Slope	1.00 1.00
296312 Lackawanna-----	80	Somewhat limited Large stones	0.14	Somewhat limited Large stones	0.14
296313 Lackawanna-----	80	Somewhat limited Large stones	0.14	Somewhat limited Large stones	0.14
296315 Lackawanna-----	80	Very limited Large stones	1.00	Very limited Large stones	1.00
296316 Lackawanna-----	80	Very limited Large stones Slope	1.00 0.08	Very limited Large stones	1.00
296317 Laidig-----	100	Very limited Large stones	1.00	Very limited Large stones	1.00
296326 Lordstown-----	85	Very limited Large stones	1.00	Very limited Large stones	1.00
296327 Lordstown-----	85	Very limited Large stones Slope	1.00 0.08	Very limited Large stones	1.00
296328 Lordstown-----	40	Very limited Large stones Slope	1.00 1.00	Very limited Large stones Slope	1.00 1.00
Oquaga-----	35	Very limited Large stones Slope	1.00 1.00	Very limited Large stones Slope	1.00 1.00



# Soil Survey of Delaware Water Gap National Recreation Area

Table 7b.--Recreational Development, Part II (Trail Management)--Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
296329 Mardin-----	85	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Depth to saturated zone	0.86
296330 Mardin-----	85	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Depth to saturated zone	0.86
296331 Mardin-----	85	Somewhat limited Depth to saturated zone Large stones	0.86 0.53	Somewhat limited Depth to saturated zone Large stones	0.86 0.53
296332 Mardin-----	87	Somewhat limited Depth to saturated zone Large stones Slope	0.86 0.53 0.08	Somewhat limited Depth to saturated zone Large stones	0.86 0.53
296335 Meckesville-----	100	Not limited		Not limited	
296337 Meckesville-----	100	Somewhat limited Large stones Slope	0.53 0.08	Somewhat limited Large stones	0.53
296338 Morris-----	80	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
296339 Morris-----	75	Very limited Large stones Depth to saturated zone	1.00 1.00	Very limited Large stones Depth to saturated zone	1.00 1.00
296340 Morris-----	80	Very limited Large stones Depth to saturated zone	1.00 1.00	Very limited Large stones Depth to saturated zone	1.00 1.00
296341 Freetown, mucky peat	100	Not rated		Not rated	
296342 Paupack, mucky peat (shallow)-----	100	Not rated		Not rated	
296343 Oquaga-----	50	Not limited		Not limited	
Lackawanna-----	35	Not limited		Not limited	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7b.--Recreational Development, Part II (Trail Management)--Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
296344					
Oquaga-----	55	Not limited		Not limited	
Lackawanna-----	30	Not limited		Not limited	
296346					
Oquaga-----	50	Very limited Large stones	1.00	Very limited Large stones	1.00
Lackawanna-----	35	Very limited Large stones	1.00	Very limited Large stones	1.00
296347					
Oquaga-----	60	Very limited Large stones Slope	1.00 0.08	Very limited Large stones	1.00
Lackawanna-----	30	Very limited Large stones Slope	1.00 0.08	Very limited Large stones	1.00
296348					
Philo-----	85	Somewhat limited Flooding	0.40	Somewhat limited Flooding	0.40
296349					
Pope-----	90	Not limited		Not limited	
296350					
Pope-----	90	Not limited		Not limited	
296351					
Rexford, somewhat poorly drained-----	40	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
Rexford, poorly drained-----	35	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
296355					
Sheffield-----	100	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
296363					
Dystrochrepts, very stony-----	85	Very limited Slope Large stones	1.00 0.53	Very limited Slope Large stones	1.00 0.53
296369					
Wayland-----	100	Very limited Depth to saturated zone Ponding Flooding	1.00 1.00 0.40	Very limited Depth to saturated zone Ponding Flooding	1.00 1.00 0.40

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7b.--Recreational Development, Part II (Trail Management)--Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
296376 Wellsboro-----	80	Somewhat limited Depth to saturated zone Large stones	0.86 0.14	Somewhat limited Depth to saturated zone Large stones	0.86 0.14
296379 Wellsboro-----	85	Very limited Large stones Depth to saturated zone Slope	1.00 0.86 0.08	Very limited Large stones Depth to saturated zone	1.00 0.86
296385 Wyoming-----	85	Not limited		Not limited	
296386 Wyoming-----	85	Not limited		Not limited	
296387 Wyoming-----	85	Not limited		Not limited	
296388 Wyoming-----	85	Somewhat limited Slope	0.50	Not limited	
296389 Wyoming-----	100	Very limited Slope	1.00	Very limited Slope	1.00
296390 Water-----	100	Not rated		Not rated	
297185 Edgemere-----	42	Not rated		Not rated	
Shohola-----	42	Very limited Large stones Depth to saturated zone	1.00 1.00	Very limited Large stones Depth to saturated zone	1.00 1.00
297186 Edgemere-----	75	Not rated		Not rated	
297188 Manlius-----	40	Very limited Large stones Slope	1.00 0.92	Very limited Large stones	1.00
Arnot-----	35	Very limited Large stones Slope	1.00 0.92	Very limited Large stones	1.00
Rock outcrop-----	15	Not rated		Not rated	
297189 Manlius-----	40	Very limited Large stones Slope	1.00 1.00	Very limited Large stones Slope	1.00 1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7b.--Recreational Development, Part II (Trail Management)--Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
297189					
Arnot-----	35	Very limited Large stones Slope	1.00 1.00	Very limited Large stones Slope	1.00 1.00
Rock outcrop-----	15	Not rated		Not rated	
297190					
Braceville-----	82	Somewhat limited Depth to saturated zone	0.11	Somewhat limited Depth to saturated zone	0.11
297191					
Wyalusing-----	85	Very limited Depth to saturated zone Flooding	1.00 0.40	Very limited Depth to saturated zone Flooding	1.00 0.40
297192					
Pope-----	95	Somewhat limited Flooding	0.40	Somewhat limited Flooding	0.40
297193					
Paupack-----	90	Not rated		Not rated	
297196					
Freetown-----	94	Not rated		Not rated	
297197					
Manlius-----	90	Somewhat limited Large stones	0.53	Somewhat limited Large stones	0.53
297198					
Manlius-----	86	Somewhat limited Large stones	0.53	Somewhat limited Large stones	0.53
297201					
Oquaga-----	75	Very limited Large stones Slope	1.00 0.92	Very limited Large stones	1.00
297203					
Delaware-----	93	Not limited		Not limited	
297204					
Delaware-----	82	Not limited		Not limited	
297205					
Delaware-----	80	Not limited		Not limited	
297209					
Philo-----	85	Somewhat limited Flooding	0.40	Somewhat limited Flooding	0.40
297210					
Barbour-----	85	Somewhat limited Too sandy	0.01	Somewhat limited Too sandy	0.01

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7b.--Recreational Development, Part II (Trail Management)--Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
297216 Wurtsboro-----	92	Very limited Large stones Depth to saturated zone	1.00 0.32	Very limited Large stones Depth to saturated zone	1.00 0.32
297217 Wurtsboro-----	88	Very limited Large stones Depth to saturated zone	1.00 0.32	Very limited Large stones Depth to saturated zone	1.00 0.32
297227 Arnot-----	88	Not limited		Not limited	
297228 Arnot-----	85	Very limited Slope	1.00	Not limited	
297229 Wyoming-----	90	Somewhat limited Large stones	0.08	Somewhat limited Large stones	0.08
297230 Wyoming-----	90	Somewhat limited Large stones	0.08	Somewhat limited Large stones	0.08
297231 Wyoming-----	90	Somewhat limited Slope Large stones	0.92 0.08	Somewhat limited Large stones	0.08
297236 Suncook-----	91	Somewhat limited Too sandy	0.59	Somewhat limited Too sandy	0.59
297237 Mardin-----	85	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Depth to saturated zone	0.86
297238 Mardin-----	85	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Depth to saturated zone	0.86
297239 Mardin-----	85	Very limited Large stones Depth to saturated zone	1.00 0.86	Very limited Large stones Depth to saturated zone	1.00 0.86
297240 Mardin-----	85	Very limited Large stones Depth to saturated zone	1.00 0.86	Very limited Large stones Depth to saturated zone	1.00 0.86
297241 Unadilla-----	90	Not limited		Not limited	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7b.--Recreational Development, Part II (Trail Management)--Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
297242					
Shohola-----	62	Very limited Large stones Depth to saturated zone	1.00 1.00	Very limited Large stones Depth to saturated zone	1.00 1.00
Edgemere-----	29	Not rated		Not rated	
297243					
Shohola-----	62	Very limited Large stones Depth to saturated zone	1.00 1.00	Very limited Large stones Depth to saturated zone	1.00 1.00
Edgemere-----	29	Not rated		Not rated	
297244					
Lordstown-----	40	Very limited Large stones	1.00	Very limited Large stones	1.00
Swartswood-----	35	Very limited Large stones	1.00	Very limited Large stones	1.00
297247					
Chenango-----	86	Not limited		Not limited	
297248					
Chenango-----	85	Not limited		Not limited	
297249					
Chenango-----	90	Somewhat limited Slope	0.50	Not limited	
297253					
Craigsville-----	50	Very limited Large stones	1.00	Very limited Large stones	1.00
Wyoming-----	40	Very limited Large stones	1.00	Very limited Large stones	1.00
297254					
Pits, shale-----	40	Not rated		Not rated	
Pits, gravel-----	40	Not rated		Not rated	
298049					
Wurtsboro, extremely stony----	90	Very limited Large stones Depth to saturated zone	1.00 0.44	Very limited Large stones Depth to saturated zone	1.00 0.44
298050					
Wurtsboro, extremely stony----	60	Very limited Large stones Depth to saturated zone	1.00 0.44	Very limited Large stones Depth to saturated zone	1.00 0.44

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7b.--Recreational Development, Part II (Trail Management)--Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
298050 Swartswood, extremely stony----	40	Very limited Large stones	1.00	Very limited Large stones	1.00
298051 Wurtsboro, extremely stony----	60	Very limited Large stones Depth to saturated zone	1.00 0.44	Very limited Large stones Depth to saturated zone	1.00 0.44
Swartswood, extremely stony----	40	Very limited Large stones	1.00	Very limited Large stones	1.00
298075 Colonie-----	80	Somewhat limited Too sandy	0.19	Somewhat limited Too sandy	0.19
298188 Lackawanna, extremely stony----	85	Very limited Large stones Slope	1.00 1.00	Very limited Large stones	1.00
298189 Lackawanna, extremely stony----	85	Very limited Large stones	1.00	Very limited Large stones	1.00
298221 Swartswood, extremely stony----	90	Very limited Large stones	1.00	Very limited Large stones	1.00
298222 Swartswood, extremely stony----	90	Very limited Large stones	1.00	Very limited Large stones	1.00
298223 Swartswood, extremely stony----	85	Very limited Large stones Slope	1.00 1.00	Very limited Large stones	1.00
298255 Delaware, rarely flooded-----	80	Not limited		Not limited	
298256 Delaware, rarely flooded-----	80	Not limited		Not limited	
298257 Wallpack-----	85	Very limited Water erosion	1.00	Very limited Water erosion	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7b.--Recreational Development, Part II (Trail Management)--Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
298258 Wallpack-----	85	Very limited Water erosion Slope	1.00 0.50	Very limited Water erosion	1.00
298259 Wallpack, extremely stony-----	85	Very limited Large stones	1.00	Very limited Large stones	1.00
298260 Wallpack, extremely stony-----	85	Very limited Large stones	1.00	Very limited Large stones	1.00
298261 Wallpack-----	85	Not limited		Not limited	
298262 Wallpack, extremely stony-----	85	Very limited Large stones Slope	1.00 1.00	Very limited Large stones	1.00
298265 Venango, extremely stony-----	90	Very limited Large stones Depth to saturated zone	1.00 1.00	Very limited Large stones Depth to saturated zone	1.00 1.00
298266 Venango, extremely stony-----	85	Very limited Large stones Depth to saturated zone Water erosion	1.00 1.00 1.00	Very limited Large stones Depth to saturated zone Water erosion	1.00 1.00 1.00
298409 Swartswood, extremely stony----	90	Very limited Large stones	1.00	Very limited Large stones	1.00
298411 Swartswood, extremely stony----	90	Very limited Large stones	1.00	Very limited Large stones	1.00
298413 Swartswood, extremely stony----	85	Very limited Large stones Slope	1.00 1.00	Very limited Large stones	1.00
318498 Hazen, very stony---	60	Somewhat limited Large stones	0.19	Somewhat limited Large stones	0.19
Hoosic, very stony--	35	Somewhat limited Large stones	0.19	Somewhat limited Large stones	0.19



# Soil Survey of Delaware Water Gap National Recreation Area

Table 7b.--Recreational Development, Part II (Trail Management)--Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
318533 Hazen, very stony---	50	Somewhat limited Large stones	0.19	Somewhat limited Large stones	0.19
Hoosic, very stony--	40	Somewhat limited Large stones	0.19	Somewhat limited Large stones	0.19
319783 Catden-----	85	Not rated		Not rated	
319784 Fredon, very stony--	50	Somewhat limited Depth to saturated zone Large stones	0.92 0.19	Somewhat limited Depth to saturated zone Large stones	0.92 0.19
Halsey, very stony--	40	Very limited Depth to saturated zone Ponding Large stones	1.00 1.00 0.19	Very limited Depth to saturated zone Ponding Large stones	1.00 1.00 0.19
543222 Andover, extremely stony-----	55	Very limited Large stones Depth to saturated zone	1.00 1.00	Very limited Large stones Depth to saturated zone	1.00 1.00
Buchanan, extremely stony-----	40	Very limited Large stones Depth to saturated zone	1.00 0.11	Very limited Large stones Depth to saturated zone	1.00 0.11
543243 Berks-----	65	Very limited Slope	1.00	Very limited Slope	1.00
Weikert-----	25	Very limited Slope	1.00	Very limited Slope	1.00
543246 Buchanan-----	75	Somewhat limited Depth to saturated zone	0.11	Somewhat limited Depth to saturated zone	0.11
543247 Buchanan, extremely stony-----	80	Very limited Large stones Depth to saturated zone	1.00 0.11	Very limited Large stones Depth to saturated zone	1.00 0.11
543257 Chippewa-----	90	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7b.--Recreational Development, Part II (Trail Management)--Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
543258 Chippewa-----	90	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
543259 Chippewa, extremely stony-----	90	Very limited Large stones Depth to saturated zone	1.00 1.00	Very limited Large stones Depth to saturated zone	1.00 1.00
543271 Delaware-----	90	Not limited		Not limited	
543276 Fluvaquents-----	85	Very limited Depth to saturated zone Flooding	1.00 0.40	Very limited Depth to saturated zone Flooding	1.00 0.40
543292 Hazleton, extremely stony-----	90	Very limited Large stones Slope	1.00 0.08	Very limited Large stones	1.00
543293 Hazleton, extremely stony-----	90	Very limited Large stones Slope	1.00 1.00	Very limited Large stones Slope	1.00 1.00
543299 Laidig, extremely stony-----	90	Very limited Large stones	1.00	Very limited Large stones	1.00
543300 Laidig, extremely stony-----	90	Very limited Large stones Slope	1.00 0.08	Very limited Large stones	1.00
543304 Laidig-----	50	Very limited Large stones Slope	1.00 1.00	Very limited Large stones Slope	1.00 1.00
Rubble land-----	40	Very limited Large stones Slope	1.00 1.00	Very limited Large stones Slope	1.00 1.00
543318 Rubble land-----	75	Very limited Large stones Slope	1.00 1.00	Very limited Large stones Slope	1.00 1.00
543327 Swartswood-----	90	Not limited		Not limited	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7b.--Recreational Development, Part II (Trail Management)--Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
543328 Swartswood-----	90	Not limited		Not limited	
543330 Swartswood, extremely stony----	50	Very limited Large stones	1.00	Very limited Large stones	1.00
Wurtsboro, extremely stony----	30	Very limited Large stones	1.00	Very limited Large stones	1.00
543331 Swartswood, extremely stony----	50	Very limited Large stones Slope	1.00 0.08	Very limited Large stones	1.00
Wurtsboro, extremely stony----	30	Very limited Large stones Slope	1.00 0.08	Very limited Large stones	1.00
543359 Volusia-----	85	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
543360 Volusia, extremely stony-----	85	Very limited Large stones Depth to saturated zone	1.00 1.00	Very limited Large stones Depth to saturated zone	1.00 1.00
543374 Wurtsboro-----	90	Not limited		Not limited	
543375 Wurtsboro-----	90	Not limited		Not limited	
612280 Scio-----	80	Somewhat limited Depth to saturated zone	0.08	Somewhat limited Depth to saturated zone	0.08
612666 Colonie-----	80	Somewhat limited Too sandy	0.19	Somewhat limited Too sandy	0.19
612668 Hoosic, very stony--	60	Somewhat limited Large stones	0.19	Somewhat limited Large stones	0.19
Hazen, very stony---	30	Somewhat limited Large stones	0.19	Somewhat limited Large stones	0.19

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7b.--Recreational Development, Part II (Trail Management)--Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
612724 Lordstown, very rocky-----	50	Very limited Large stones Slope	1.00 1.00	Very limited Large stones	1.00
Wallpack, very rocky	40	Very limited Large stones Slope	1.00 1.00	Very limited Large stones	1.00
612732 Atherton, very poorly drained-----	60	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
Atherton, poorly drained-----	30	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
612738 Fluvaquents, occasionally flooded-----	90	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
612753 Wallpack, aeolian mantle, very stony-	85	Somewhat limited Large stones	0.19	Somewhat limited Large stones	0.19
612756 Wallpack, aeolian mantle, very stony-	85	Somewhat limited Large stones	0.19	Somewhat limited Large stones	0.19
612757 Wallpack, aeolian mantle, very stony-	85	Very limited Slope Large stones	1.00 0.19	Somewhat limited Large stones	0.19
612767 Wellsboro, extremely stony----	85	Very limited Large stones Water erosion	1.00 1.00	Very limited Large stones Water erosion	1.00 1.00
612768 Wellsboro, extremely stony----	85	Very limited Large stones	1.00	Very limited Large stones	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7b.--Recreational Development, Part II (Trail Management)--Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
613393 Alden, extremely stony-----	90	Very limited Large stones Depth to saturated zone Ponding	1.00 1.00 1.00	Very limited Large stones Depth to saturated zone Ponding	1.00 1.00 1.00
613447 Unadilla-----	85	Not limited		Not limited	
613448 Unadilla-----	85	Not limited		Not limited	
614075 Wurtsboro, extremely stony----	80	Very limited Large stones Slope Depth to saturated zone	1.00 1.00 0.44	Very limited Large stones Depth to saturated zone	1.00 0.44
Swartswood, extremely stony----	20	Very limited Large stones Slope	1.00 1.00	Very limited Large stones	1.00
620179 Arnot, very rocky---	55	Very limited Large stones	1.00	Very limited Large stones	1.00
Lordstown, very rocky-----	40	Very limited Large stones	1.00	Very limited Large stones	1.00
620180 Arnot-----	45	Very limited Large stones Slope	1.00 1.00	Very limited Large stones	1.00
Lordstown-----	40	Very limited Large stones Slope	1.00 1.00	Very limited Large stones	1.00
Rock outcrop-----	15	Not rated		Not rated	
620181 Arnot-----	60	Very limited Large stones Slope	1.00 1.00	Very limited Large stones Slope	1.00 1.00
Lordstown-----	25	Very limited Large stones Slope	1.00 1.00	Very limited Large stones Slope	1.00 1.00
Rock outcrop-----	15	Not rated		Not rated	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7b.--Recreational Development, Part II (Trail Management)--Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
623089 Chippewa, extremely stony-----	80	Very limited Large stones Depth to saturated zone Ponding	1.00 1.00 1.00	Very limited Large stones Depth to saturated zone Ponding	1.00 1.00 1.00
623109 Farmington-----	50	Very limited Large stones	1.00	Very limited Large stones	1.00
Rock outcrop-----	40	Not rated		Not rated	
624811 Galway, very rocky--	80	Very limited Large stones Slope	1.00 1.00	Very limited Large stones Slope	1.00 1.00
624813 Lackawanna, extremely stony----	85	Very limited Large stones	1.00	Very limited Large stones	1.00
624816 Lordstown, very rocky-----	50	Very limited Large stones	1.00	Very limited Large stones	1.00
Wallpack, very rocky	35	Very limited Large stones	1.00	Very limited Large stones	1.00
624822 Lordstown-----	50	Somewhat limited Slope	0.50	Not limited	
Wallpack-----	35	Very limited Water erosion Slope	1.00 0.50	Very limited Water erosion	1.00
624823 Lordstown-----	50	Not limited		Not limited	
Wallpack-----	35	Very limited Water erosion	1.00	Very limited Water erosion	1.00
624824 Lordstown-----	50	Not limited		Not limited	
Wallpack-----	35	Not limited		Not limited	
624826 Manlius, very rocky-	60	Very limited Large stones Slope	1.00 1.00	Very limited Large stones Slope	1.00 1.00
Nassau, very rocky--	25	Very limited Large stones Slope	1.00 1.00	Very limited Large stones Slope	1.00 1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7b.--Recreational Development, Part II (Trail Management)--Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
624827					
Nassau, very rocky--	55	Very limited Large stones	1.00	Very limited Large stones	1.00
Manlius, very rocky-	44	Very limited Large stones	1.00	Very limited Large stones	1.00
624828					
Nassau, very rocky--	55	Very limited Large stones	1.00	Very limited Large stones	1.00
Manlius, very rocky-	44	Very limited Large stones	1.00	Very limited Large stones	1.00
624829					
Nassau, very rocky--	55	Very limited Large stones Slope	1.00 1.00	Very limited Large stones	1.00
Manlius, very rocky-	44	Very limited Large stones Slope	1.00 1.00	Very limited Large stones	1.00
624832					
Nassau-----	50	Very limited Large stones Slope	1.00 1.00	Very limited Large stones Slope	1.00 1.00
Rock outcrop-----	45	Not rated		Not rated	
624841					
Oquaga-----	60	Very limited Large stones Slope	1.00 1.00	Very limited Large stones Slope	1.00 1.00
Rock outcrop-----	25	Not rated		Not rated	
624845					
Rock outcrop-----	45	Not rated		Not rated	
Farmington-----	35	Very limited Large stones Water erosion Slope	1.00 1.00 1.00	Very limited Large stones Water erosion	1.00 1.00
Galway-----	20	Very limited Large stones Slope	1.00 1.00	Very limited Large stones	1.00
624846					
Rock outcrop-----	40	Not rated		Not rated	
Arnot-----	30	Very limited Large stones Slope	1.00 1.00	Very limited Large stones Slope	1.00 1.00
Rubble land-----	20	Not rated		Not rated	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7b.--Recreational Development, Part II (Trail Management)--Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
626816 Udifluvents, occasionally flooded-----	90	Somewhat limited Too sandy	0.76	Somewhat limited Too sandy	0.76
635458 Oquaga, very rocky--	55	Very limited Large stones	1.00	Very limited Large stones	1.00
Lackawanna, very rocky-----	30	Very limited Large stones	1.00	Very limited Large stones	1.00
635459 Oquaga, very rocky--	50	Very limited Large stones Slope	1.00 1.00	Very limited Large stones	1.00
Lackawanna, very rocky-----	35	Very limited Large stones Slope	1.00 1.00	Very limited Large stones	1.00
740953 Delaware, rarely flooded-----	80	Not limited		Not limited	
740968 Nassau, very rocky--	55	Very limited Large stones	1.00	Very limited Large stones	1.00
Manlius, very rocky-	44	Very limited Large stones	1.00	Very limited Large stones	1.00
740969 Nassau, very rocky--	55	Very limited Large stones Slope	1.00 1.00	Very limited Large stones	1.00
Manlius, very rocky-	44	Very limited Large stones Slope	1.00 1.00	Very limited Large stones	1.00
740971 Oquaga, very rocky--	55	Very limited Large stones	1.00	Very limited Large stones	1.00
Lackawanna, very rocky-----	30	Very limited Large stones	1.00	Very limited Large stones	1.00
740972 Oquaga, very rocky--	50	Very limited Large stones Slope	1.00 1.00	Very limited Large stones	1.00
Lackawanna, very rocky-----	35	Very limited Large stones Slope	1.00 1.00	Very limited Large stones	1.00



# Soil Survey of Delaware Water Gap National Recreation Area

Table 7b.--Recreational Development, Part II (Trail Management)--Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
740974					
Oquaga-----	60	Very limited Large stones Slope	1.00 1.00	Very limited Large stones Slope	1.00 1.00
Rock outcrop-----	25	Not rated		Not rated	
740975					
Rock outcrop-----	40	Not rated		Not rated	
Arnot-----	30	Very limited Large stones Slope	1.00 1.00	Very limited Large stones Slope	1.00 1.00
Rubble land-----	20	Not rated		Not rated	
740987					
Scio-----	80	Somewhat limited Depth to saturated zone	0.08	Somewhat limited Depth to saturated zone	0.08
740988					
Udifluvents, occasionally flooded-----	90	Somewhat limited Too sandy	0.76	Somewhat limited Too sandy	0.76
740991					
Unadilla-----	85	Not limited		Not limited	
740992					
Unadilla-----	85	Not limited		Not limited	
740995					
Wellsboro, extremely stony----	85	Very limited Large stones	1.00	Very limited Large stones	1.00
740996					
Wellsboro, extremely stony----	85	Very limited Large stones Water erosion	1.00 1.00	Very limited Large stones Water erosion	1.00 1.00
741149					
Lackawanna, extremely stony----	85	Very limited Large stones	1.00	Very limited Large stones	1.00
741150					
Lackawanna, extremely stony----	85	Very limited Large stones Slope	1.00 1.00	Very limited Large stones	1.00
801114					
Oquaga-----	75	Very limited Large stones	1.00	Very limited Large stones	1.00
Rock outcrop-----	15	Not rated		Not rated	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7b.--Recreational Development, Part II (Trail Management)--Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
810906 Oquaga-----	75	Very limited Large stones	1.00	Very limited Large stones	1.00
Rock outcrop-----	15	Not rated		Not rated	
1147465 Alden, extremely stony-----	90	Very limited Large stones Depth to saturated zone Ponding	1.00 1.00 1.00	Very limited Large stones Depth to saturated zone Ponding	1.00 1.00 1.00
1147467 Arnot, very rocky---	55	Very limited Large stones	1.00	Very limited Large stones	1.00
Lordstown, very rocky-----	40	Very limited Large stones	1.00	Very limited Large stones	1.00
1147468 Arnot-----	45	Very limited Large stones Slope	1.00 1.00	Very limited Large stones Slope	1.00 1.00
Lordstown-----	40	Very limited Large stones Slope	1.00 1.00	Very limited Large stones Slope	1.00 1.00
Rock outcrop-----	15	Not rated		Not rated	
1147469 Arnot-----	60	Very limited Large stones Slope	1.00 1.00	Very limited Large stones Slope	1.00 1.00
Lordstown-----	25	Very limited Large stones Slope	1.00 1.00	Very limited Large stones Slope	1.00 1.00
Rock outcrop-----	15	Not rated		Not rated	
1147470 Atherton, very poorly drained-----	60	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
Atherton, poorly drained-----	30	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
1147471 Catden-----	85	Not rated		Not rated	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7b.--Recreational Development, Part II (Trail Management)--Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1147474 Chippewa, extremely stony-----	80	Very limited Large stones Depth to saturated zone Ponding	1.00 1.00 1.00	Very limited Large stones Depth to saturated zone Ponding	1.00 1.00 1.00
1147475 Colonie-----	80	Somewhat limited Too sandy	0.19	Somewhat limited Too sandy	0.19
1147478 Delaware, rarely flooded-----	80	Not limited		Not limited	
1147482 Fredon, very stony--	50	Somewhat limited Depth to saturated zone Large stones	0.92 0.19	Somewhat limited Depth to saturated zone Large stones	0.92 0.19
Halsey, very stony--	40	Very limited Depth to saturated zone Ponding Large stones	1.00 1.00 0.19	Very limited Depth to saturated zone Ponding Large stones	1.00 1.00 0.19
1147485 Hazen, very stony---	60	Somewhat limited Large stones	0.19	Somewhat limited Large stones	0.19
Hoosic, very stony--	35	Somewhat limited Large stones	0.19	Somewhat limited Large stones	0.19
1147490 Hoosic, very stony--	60	Somewhat limited Large stones	0.19	Somewhat limited Large stones	0.19
Hazen, very stony---	30	Somewhat limited Large stones	0.19	Somewhat limited Large stones	0.19
1147491 Hoosic, very stony--	50	Very limited Slope Large stones	1.00 0.19	Very limited Slope Large stones	1.00 0.19
Otisville, very stony-----	40	Very limited Slope Large stones	1.00 0.19	Very limited Slope Large stones	1.00 0.19
1147492 Lackawanna, extremely stony----	85	Very limited Large stones	1.00	Very limited Large stones	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7b.--Recreational Development, Part II (Trail Management)--Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1147500 Wurtsboro, extremely stony----	90	Very limited Large stones Depth to saturated zone	1.00 0.44	Very limited Large stones Depth to saturated zone	1.00 0.44
1147501 Wurtsboro, extremely stony----	60	Very limited Large stones Depth to saturated zone	1.00 0.44	Very limited Large stones Depth to saturated zone	1.00 0.44
Swartswood, extremely stony----	40	Very limited Large stones	1.00	Very limited Large stones	1.00
1147502 Wurtsboro, extremely stony----	60	Very limited Large stones Depth to saturated zone	1.00 0.44	Very limited Large stones Depth to saturated zone	1.00 0.44
Swartswood, extremely stony----	40	Very limited Large stones	1.00	Very limited Large stones	1.00
1147527 Udorthents-----	60	Not limited		Not limited	
Urban land-----	40	Not rated		Not rated	
1147532 Udorthents-----	100	Not limited		Not limited	
1147533 Wurtsboro, extremely stony----	80	Very limited Large stones Slope Depth to saturated zone	1.00 1.00 0.44	Very limited Large stones Depth to saturated zone	1.00 0.44
Swartswood, extremely stony----	20	Very limited Large stones Slope	1.00 1.00	Very limited Large stones	1.00
1948749 Arnot-----	90	Not limited		Not limited	
1948750 Arnot-----	90	Not limited		Not limited	
1948751 Arnot-----	90	Somewhat limited Slope	0.50	Not limited	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 7b.--Recreational Development, Part II (Trail Management)--Continued

Map unit symbol and soil name	Pct. of map unit	Foot traffic and equestrian trails		Mountain bike and off-road vehicle trails	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1948774 Conotton-----	90	Not limited		Not limited	
1948775 Conotton-----	95	Not limited		Not limited	
1948776 Conotton-----	95	Somewhat limited Slope	0.50	Not limited	
1948777 Conotton-----	95	Very limited Slope	1.00	Very limited Slope	1.00
1948797 Manlius-----	90	Not limited		Not limited	
1948802 Manlius-----	90	Not limited		Not limited	
1948818 Manlius-----	90	Somewhat limited Slope	0.50	Not limited	
1948832 Penargyl-----	90	Not limited		Not limited	
1948846 Phelps-----	90	Somewhat limited Depth to saturated zone	0.08	Somewhat limited Depth to saturated zone	0.08
1948855 Udorthents, loamy---	95	Somewhat limited Depth to saturated zone	0.11	Somewhat limited Depth to saturated zone	0.11
1948989 Urban land-----	65	Not rated		Not rated	
Delaware-----	25	Not limited		Not limited	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 8.--Dwellings and Small Commercial Buildings

[Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
290836 Hoosic, very stony--	50	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Otisville, very stony-----	40	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
296265 Alden-----	100	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
296269 Fluvents, (alluvial land)-----	70	Very limited Flooding Depth to saturated zone	1.00 0.98	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Flooding Depth to saturated zone	1.00 0.98
296271 Alvira-----	55	Very limited Depth to saturated zone Depth to thin cemented pan	1.00 0.50	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone Slope	1.00 0.50
Watson-----	35	Somewhat limited Depth to saturated zone Shrink-swell Depth to thin cemented pan	0.98 0.50 0.50	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Somewhat limited Depth to saturated zone Slope Shrink-swell	0.98 0.50 0.50
296272 Bath-----	85	Somewhat limited Depth to thin cemented pan Depth to saturated zone	0.50 0.28	Very limited Depth to saturated zone	1.00	Somewhat limited Slope Depth to saturated zone	0.50 0.28
296273 Bath-----	85	Somewhat limited Slope Depth to thin cemented pan Depth to saturated zone	0.63 0.50 0.28	Very limited Depth to saturated zone Slope	1.00 0.63	Very limited Slope Depth to saturated zone	1.00 0.28

# Soil Survey of Delaware Water Gap National Recreation Area

Table 8.--Dwellings and Small Commercial Buildings--Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296274 Bath-----	85	Very limited Slope Depth to thin cemented pan Depth to saturated zone	1.00 0.50 0.28	Very limited Slope Depth to saturated zone	1.00 1.00	Very limited Slope Depth to saturated zone	1.00 0.28
296275 Bath-----	90	Somewhat limited Depth to thin cemented pan Depth to saturated zone	0.50 0.28	Very limited Depth to saturated zone	1.00	Somewhat limited Slope Depth to saturated zone	0.50 0.28
296276 Bath-----	90	Very limited Slope Depth to thin cemented pan Depth to saturated zone	1.00 0.50 0.28	Very limited Depth to saturated zone Slope	1.00 1.00	Very limited Slope Depth to saturated zone	1.00 0.28
296277 Benson-----	55	Very limited Depth to hard bedrock Large stones	1.00 0.02	Very limited Depth to hard bedrock Large stones	1.00 0.02	Very limited Depth to hard bedrock Large stones	1.00 0.02
296278 Benson-----	60	Very limited Depth to hard bedrock Slope Large stones	1.00 1.00 1.00 0.02	Very limited Depth to hard bedrock Slope Large stones	1.00 1.00 1.00 0.02	Very limited Slope Depth to hard bedrock Large stones	1.00 1.00 0.02
Rock outcrop-----	20	Not rated		Not rated		Not rated	
296279 Benson-----	60	Very limited Slope Depth to hard bedrock Large stones	1.00 1.00 1.00 0.02	Very limited Slope Depth to hard bedrock Large stones	1.00 1.00 1.00 0.02	Very limited Slope Depth to hard bedrock Large stones	1.00 1.00 0.02
Rock outcrop-----	25	Not rated		Not rated		Not rated	
296280 Braceville-----	90	Somewhat limited Depth to thin cemented pan Depth to saturated zone	0.50 0.07	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.07
296281 Braceville-----	90	Somewhat limited Depth to thin cemented pan Depth to saturated zone	0.50 0.07	Very limited Depth to saturated zone	1.00	Somewhat limited Slope Depth to saturated zone	0.50 0.07

# Soil Survey of Delaware Water Gap National Recreation Area

Table 8.--Dwellings and Small Commercial Buildings--Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296283 Buchanan-----	90	Somewhat limited Depth to thin cemented pan Depth to saturated zone	0.50 0.07	Very limited Depth to saturated zone	1.00	Somewhat limited Slope Depth to saturated zone	0.12 0.07
296288 Chippewa-----	48	Very limited Depth to saturated zone Depth to thin cemented pan	1.00 0.50	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
Norwich-----	48	Very limited Depth to saturated zone Depth to thin cemented pan	1.00 0.50	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
296289 Chippewa-----	47	Very limited Depth to saturated zone Depth to thin cemented pan	1.00 0.50	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
Norwich-----	47	Very limited Depth to saturated zone Depth to thin cemented pan	1.00 0.50	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
296295 Udorthents, cut and fill-----	90	Not rated		Not rated		Not rated	
296297 Dekalb-----	100	Very limited Slope Depth to hard bedrock Large stones	1.00 0.29 0.03	Very limited Depth to hard bedrock Slope Large stones	1.00 1.00 0.03	Very limited Slope Depth to hard bedrock Large stones	1.00 0.29 0.03
296298 Dekalb-----	100	Very limited Slope Depth to hard bedrock Large stones	1.00 0.29 0.03	Very limited Slope Depth to hard bedrock Large stones	1.00 1.00 0.03	Very limited Slope Depth to hard bedrock Large stones	1.00 0.29 0.03
296303 Hazleton-----	100	Very limited Slope Large stones	1.00 0.07	Very limited Slope Large stones Depth to hard bedrock	1.00 0.07 0.01	Very limited Slope Large stones	1.00 0.07



# Soil Survey of Delaware Water Gap National Recreation Area

Table 8.--Dwellings and Small Commercial Buildings--Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296304 Holly-----	100	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Flooding Depth to saturated zone	1.00 1.00
296311 Lackawanna-----	40	Very limited Slope Depth to thin cemented pan Depth to saturated zone	1.00 0.50 0.24	Very limited Slope Depth to saturated zone	1.00 1.00	Very limited Slope Depth to saturated zone	1.00 0.24
Bath-----	30	Very limited Slope Depth to thin cemented pan Depth to saturated zone	1.00 0.50 0.28	Very limited Slope Depth to saturated zone	1.00 1.00	Very limited Slope Depth to saturated zone	1.00 0.28
296312 Lackawanna-----	80	Somewhat limited Depth to thin cemented pan Depth to saturated zone	0.50 0.24	Very limited Depth to saturated zone	1.00	Somewhat limited Slope Depth to saturated zone	0.50 0.24
296313 Lackawanna-----	80	Somewhat limited Slope Depth to thin cemented pan Depth to saturated zone	0.63 0.50 0.24	Very limited Depth to saturated zone Slope	1.00 0.63	Very limited Slope Depth to saturated zone	1.00 0.24
296315 Lackawanna-----	80	Somewhat limited Depth to thin cemented pan Depth to saturated zone	0.50 0.24	Very limited Depth to saturated zone	1.00	Somewhat limited Slope Depth to saturated zone	0.50 0.24
296316 Lackawanna-----	80	Very limited Slope Depth to thin cemented pan Depth to saturated zone	1.00 0.50 0.24	Very limited Depth to saturated zone Slope	1.00 1.00	Very limited Slope Depth to saturated zone	1.00 0.24
296317 Laidig-----	100	Somewhat limited Depth to thin cemented pan	0.50	Very limited Depth to saturated zone	1.00	Not limited	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 8.--Dwellings and Small Commercial Buildings--Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296326 Lordstown-----	85	Somewhat limited Depth to hard bedrock Large stones	0.46 0.10	Very limited Depth to hard bedrock Large stones	1.00 0.10	Somewhat limited Slope Depth to hard bedrock Large stones	0.50 0.46 0.10
296327 Lordstown-----	85	Very limited Slope Depth to hard bedrock Large stones	1.00 0.46 0.10	Very limited Depth to hard bedrock Slope Large stones	1.00 1.00 0.10	Very limited Slope Depth to hard bedrock	1.00 0.46
296328 Lordstown-----	40	Very limited Slope Depth to hard bedrock	1.00 0.46	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 0.46
Oquaga-----	35	Very limited Slope Depth to hard bedrock	1.00 0.46	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 0.46
296329 Mardin-----	85	Very limited Depth to saturated zone Depth to thin cemented pan	1.00 0.50	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone Slope	1.00 0.50
296330 Mardin-----	85	Very limited Depth to saturated zone Slope Depth to thin cemented pan	1.00 0.63 0.50	Very limited Depth to saturated zone Slope	1.00 0.63	Very limited Slope Depth to saturated zone	1.00 1.00
296331 Mardin-----	85	Very limited Depth to saturated zone Depth to thin cemented pan	1.00 0.50	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone Slope	1.00 0.50
296332 Mardin-----	87	Very limited Depth to saturated zone Slope Depth to thin cemented pan	1.00 1.00 0.50	Very limited Depth to saturated zone Slope	1.00 1.00	Very limited Slope Depth to saturated zone	1.00 1.00
296335 Meckesville-----	100	Somewhat limited Slope Depth to thin cemented pan	0.63 0.50	Somewhat limited Depth to saturated zone Slope	0.98 0.63	Very limited Slope	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 8.--Dwellings and Small Commercial Buildings--Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296337 Meckesville-----	100	Very limited Slope Depth to thin cemented pan	1.00 0.50	Very limited Slope Depth to saturated zone	1.00 0.98	Very limited Slope	1.00
296338 Morris-----	80	Very limited Depth to saturated zone Depth to thin cemented pan	1.00 0.50	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone Slope	1.00 0.50
296339 Morris-----	75	Very limited Depth to saturated zone Depth to thin cemented pan	1.00 0.50	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
296340 Morris-----	80	Very limited Depth to saturated zone Depth to thin cemented pan Slope	1.00 0.50 0.16	Very limited Depth to saturated zone Slope	1.00 0.16	Very limited Depth to saturated zone Slope	1.00 1.00
296341 Freetown, mucky peat	100	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
296342 Paupack, mucky peat (shallow)-----	100	Very limited Ponding Subsidence Depth to saturated zone	1.00 1.00 1.00	Very limited Ponding Subsidence Depth to saturated zone	1.00 1.00 1.00	Very limited Ponding Subsidence Depth to saturated zone	1.00 1.00 1.00
296343 Oquaga-----	50	Somewhat limited Depth to hard bedrock	0.46	Very limited Depth to hard bedrock	1.00	Somewhat limited Slope Depth to hard bedrock	0.50 0.46
Lackawanna-----	35	Somewhat limited Depth to thin cemented pan Depth to saturated zone	0.50 0.24	Very limited Depth to saturated zone	1.00	Somewhat limited Slope Depth to saturated zone	0.50 0.24
296344 Oquaga-----	55	Somewhat limited Slope Depth to hard bedrock	0.63 0.46	Very limited Depth to hard bedrock Slope	1.00 0.63	Very limited Slope Depth to hard bedrock	1.00 0.46

# Soil Survey of Delaware Water Gap National Recreation Area

Table 8.--Dwellings and Small Commercial Buildings--Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296344 Lackawanna-----	30	Somewhat limited Slope Depth to thin cemented pan Depth to saturated zone	0.63 0.50 0.24	Very limited Depth to saturated zone Slope	1.00 0.63	Very limited Slope Depth to saturated zone	1.00 0.24
296346 Oquaga-----	50	Somewhat limited Depth to hard bedrock	0.46	Very limited Depth to hard bedrock	1.00	Somewhat limited Depth to hard bedrock	0.46
Lackawanna-----	35	Somewhat limited Depth to thin cemented pan Depth to saturated zone	0.50 0.24	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.24
296347 Oquaga-----	60	Very limited Slope Depth to hard bedrock	1.00 0.46	Very limited Depth to hard bedrock Slope	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 0.46
Lackawanna-----	30	Very limited Slope Depth to thin cemented pan Depth to saturated zone	1.00 0.50 0.24	Very limited Depth to saturated zone Slope	1.00 1.00	Very limited Slope Depth to saturated zone	1.00 0.24
296348 Philo-----	85	Very limited Flooding Depth to saturated zone	1.00 0.07	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Flooding Depth to saturated zone	1.00 0.07
296349 Pope-----	90	Very limited Flooding	1.00	Very limited Flooding Depth to saturated zone	1.00 0.15	Very limited Flooding	1.00
296350 Pope-----	90	Very limited Flooding	1.00	Very limited Flooding Depth to saturated zone	1.00 0.15	Very limited Flooding	1.00
296351 Rexford, somewhat poorly drained----	40	Very limited Depth to saturated zone Depth to thin cemented pan	1.00 0.50	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 8.--Dwellings and Small Commercial Buildings--Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296351 Rexford, poorly drained-----	35	Very limited Depth to saturated zone Depth to thin cemented pan	1.00  0.50	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
296355 Sheffield-----	100	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
296363 Dystrochrepts, very stony-----	85	Very limited Slope	1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope	1.00
296369 Wayland-----	100	Very limited Ponding Flooding Depth to saturated zone	1.00 1.00 1.00	Very limited Ponding Flooding Depth to saturated zone	1.00 1.00 1.00	Very limited Ponding Flooding Depth to saturated zone	1.00 1.00 1.00
296376 Wellsboro-----	80	Very limited Depth to saturated zone Depth to thin cemented pan	1.00  0.50	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone Slope	1.00  0.50
296379 Wellsboro-----	85	Very limited Depth to saturated zone Slope Depth to thin cemented pan	1.00  1.00 0.50	Very limited Depth to saturated zone Slope	1.00  1.00	Very limited Slope Depth to saturated zone	1.00 1.00
296385 Wyoming-----	85	Not limited		Not limited		Not limited	
296386 Wyoming-----	85	Not limited		Not limited		Somewhat limited Slope	0.50
296387 Wyoming-----	85	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Very limited Slope	1.00
296388 Wyoming-----	85	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
296389 Wyoming-----	100	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 8.--Dwellings and Small Commercial Buildings--Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296390 Water-----	100	Not rated		Not rated		Not rated	
297185 Edgemere-----	42	Very limited Ponding Depth to saturated zone Depth to thin cemented pan	1.00 1.00 0.50	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone Slope	1.00 1.00 0.50
Shohola-----	42	Very limited Depth to saturated zone Depth to thin cemented pan Slope	1.00 0.50 0.04	Very limited Depth to saturated zone Slope	1.00 0.04	Very limited Depth to saturated zone Slope	1.00 1.00
297186 Edgemere-----	75	Very limited Ponding Depth to saturated zone Depth to thin cemented pan	1.00 1.00 0.50	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
297188 Manlius-----	40	Very limited Slope Depth to hard bedrock	1.00 0.46	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 0.46
Arnot-----	35	Very limited Slope Depth to hard bedrock Large stones	1.00 1.00 0.10	Very limited Slope Depth to hard bedrock Large stones	1.00 1.00 0.10	Very limited Slope Depth to hard bedrock Large stones	1.00 1.00 0.10
Rock outcrop-----	15	Not rated		Not rated		Not rated	
297189 Manlius-----	40	Very limited Slope Depth to hard bedrock	1.00 0.46	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 0.46
Arnot-----	35	Very limited Slope Depth to hard bedrock Large stones	1.00 1.00 0.10	Very limited Slope Depth to hard bedrock Large stones	1.00 1.00 0.10	Very limited Slope Depth to hard bedrock Large stones	1.00 1.00 0.10
Rock outcrop-----	15	Not rated		Not rated		Not rated	
297190 Braceville-----	82	Somewhat limited Depth to saturated zone Depth to thin cemented pan	0.81 0.50	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.81

# Soil Survey of Delaware Water Gap National Recreation Area

Table 8.--Dwellings and Small Commercial Buildings--Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
297191 Wyalusing-----	85	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Flooding Depth to saturated zone	1.00 1.00
297192 Pope-----	95	Very limited Flooding	1.00	Very limited Flooding	1.00	Very limited Flooding	1.00
297193 Paupack-----	90	Very limited Ponding Subsidence Depth to saturated zone	1.00 1.00 1.00	Very limited Ponding Subsidence Depth to saturated zone	1.00 1.00 1.00	Very limited Ponding Subsidence Depth to saturated zone	1.00 1.00 1.00
297196 Freetown-----	94	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
297197 Manlius-----	90	Somewhat limited Depth to hard bedrock	0.46	Very limited Depth to hard bedrock	1.00	Somewhat limited Slope Depth to hard bedrock	0.50 0.46
297198 Manlius-----	86	Somewhat limited Slope Depth to hard bedrock	0.63 0.46	Very limited Depth to hard bedrock Slope	1.00 0.63	Very limited Slope Depth to hard bedrock	1.00 0.46
297201 Oquaga-----	75	Very limited Slope Depth to hard bedrock Large stones	1.00 0.29 0.02	Very limited Slope Depth to hard bedrock Large stones	1.00 1.00 0.02	Very limited Slope Depth to hard bedrock Large stones	1.00 0.29 0.02
297203 Delaware-----	93	Very limited Flooding	1.00	Very limited Flooding	1.00	Very limited Flooding	1.00
297204 Delaware-----	82	Very limited Flooding	1.00	Very limited Flooding	1.00	Very limited Flooding Slope	1.00 0.50
297205 Delaware-----	80	Very limited Flooding Slope	1.00 0.96	Very limited Flooding Slope	1.00 0.96	Very limited Slope Flooding	1.00 1.00
297209 Philo-----	85	Very limited Flooding Depth to saturated zone	1.00 0.07	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Flooding Depth to saturated zone	1.00 0.07

# Soil Survey of Delaware Water Gap National Recreation Area

Table 8.--Dwellings and Small Commercial Buildings--Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
297210 Barbour-----	85	Very limited Flooding	1.00	Very limited Flooding Depth to saturated zone	1.00 0.35	Very limited Flooding	1.00
297216 Wurtsboro-----	92	Somewhat limited Depth to saturated zone Depth to thin cemented pan	0.95 0.50	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.95
297217 Wurtsboro-----	88	Somewhat limited Depth to saturated zone Slope Depth to thin cemented pan	0.95 0.63 0.50	Very limited Depth to saturated zone Slope	1.00 0.63	Very limited Slope Depth to saturated zone	1.00 0.95
297227 Arnot-----	88	Very limited Depth to hard bedrock Slope	1.00 0.04	Very limited Depth to hard bedrock Slope	1.00 0.04	Very limited Depth to hard bedrock Slope	1.00 1.00
297228 Arnot-----	85	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00
297229 Wyoming-----	90	Somewhat limited Large stones	0.26	Somewhat limited Large stones	0.26	Somewhat limited Large stones Slope	0.26 0.12
297230 Wyoming-----	90	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Very limited Slope	1.00
297231 Wyoming-----	90	Very limited Slope Large stones	1.00 0.53	Very limited Slope Large stones	1.00 0.53	Very limited Slope Large stones	1.00 0.53
297236 Suncook-----	91	Very limited Flooding	1.00	Very limited Flooding	1.00	Very limited Flooding	1.00
297237 Mardin-----	85	Very limited Depth to saturated zone Depth to thin cemented pan	1.00 0.50	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00



# Soil Survey of Delaware Water Gap National Recreation Area

Table 8.--Dwellings and Small Commercial Buildings--Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
297238 Mardin-----	85	Very limited Depth to saturated zone Slope Depth to thin cemented pan	1.00 0.63 0.50	Very limited Depth to saturated zone Slope	1.00 0.63	Very limited Slope Depth to saturated zone	1.00 1.00
297239 Mardin-----	85	Very limited Depth to saturated zone Depth to thin cemented pan	1.00 0.50	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
297240 Mardin-----	85	Very limited Depth to saturated zone Slope Depth to thin cemented pan	1.00 0.63 0.50	Very limited Depth to saturated zone Slope	1.00 0.63	Very limited Slope Depth to saturated zone	1.00 1.00
297241 Unadilla-----	90	Not limited		Not limited		Not limited	
297242 Shohola-----	62	Very limited Depth to saturated zone Depth to thin cemented pan	1.00 0.50	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
Edgemere-----	29	Very limited Ponding Depth to saturated zone Depth to thin cemented pan	1.00 1.00 0.50	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
297243 Shohola-----	62	Very limited Depth to saturated zone Slope Depth to thin cemented pan	1.00 0.63 0.50	Very limited Depth to saturated zone Slope	1.00 0.63	Very limited Slope Depth to saturated zone	1.00 1.00
Edgemere-----	29	Very limited Ponding Depth to saturated zone Slope Depth to thin cemented pan	1.00 1.00 0.63 0.50	Very limited Ponding Depth to saturated zone Slope	1.00 1.00 0.63	Very limited Ponding Slope Depth to saturated zone	1.00 1.00 1.00
297244 Lordstown-----	40	Somewhat limited Depth to hard bedrock	0.46	Very limited Depth to hard bedrock	1.00	Somewhat limited Depth to hard bedrock	0.46

Soil Survey of Delaware Water Gap National Recreation Area

Table 8.--Dwellings and Small Commercial Buildings--Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
297244 Swartswood-----	35	Somewhat limited Depth to thin cemented pan	0.50	Very limited Depth to saturated zone	1.00	Not limited	
297247 Chenango-----	86	Not limited		Not limited		Not limited	
297248 Chenango-----	85	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Very limited Slope	1.00
297249 Chenango-----	90	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
297253 Craigsville-----	50	Very limited Flooding Large stones	1.00 0.99	Very limited Flooding Large stones	1.00 0.99	Very limited Flooding Large stones	1.00 0.99
Wyoming-----	40	Not limited		Not limited		Not limited	
297254 Pits, shale-----	40	Not rated		Not rated		Not rated	
Pits, gravel-----	40	Not rated		Not rated		Not rated	
298049 Wurtsboro, extremely stony----	90	Somewhat limited Depth to saturated zone Depth to thin cemented pan	0.98 0.50	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.98
298050 Wurtsboro, extremely stony----	60	Somewhat limited Depth to saturated zone Depth to thin cemented pan	0.98 0.50	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.98
Swartswood, extremely stony----	40	Somewhat limited Depth to thin cemented pan	0.50	Not limited		Not limited	
298051 Wurtsboro, extremely stony----	60	Somewhat limited Depth to saturated zone Slope Depth to thin cemented pan	0.98 0.63 0.50	Very limited Depth to saturated zone Slope	1.00 0.63	Very limited Slope Depth to saturated zone	1.00 0.98

# Soil Survey of Delaware Water Gap National Recreation Area

Table 8.--Dwellings and Small Commercial Buildings--Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
298051 Swartswood, extremely stony----	40	Somewhat limited Slope Depth to thin cemented pan	0.63 0.50	Somewhat limited Slope	0.63	Very limited Slope	1.00
298075 Colonie-----	80	Not limited		Not limited		Somewhat limited Slope	0.50
298188 Lackawanna, extremely stony----	85	Very limited Slope Depth to thin cemented pan	1.00 0.50	Very limited Slope	1.00	Very limited Slope	1.00
298189 Lackawanna, extremely stony----	85	Somewhat limited Slope Depth to thin cemented pan	0.63 0.50	Somewhat limited Slope	0.63	Very limited Slope	1.00
298221 Swartswood, extremely stony----	90	Somewhat limited Depth to thin cemented pan	0.50	Not limited		Not limited	
298222 Swartswood, extremely stony----	90	Somewhat limited Slope Depth to thin cemented pan	0.63 0.50	Somewhat limited Slope	0.63	Very limited Slope	1.00
298223 Swartswood, extremely stony----	85	Very limited Slope Depth to thin cemented pan	1.00 0.50	Very limited Slope	1.00	Very limited Slope	1.00
298255 Delaware, rarely flooded-----	80	Very limited Flooding	1.00	Very limited Flooding	1.00	Very limited Flooding Slope	1.00 0.50
298256 Delaware, rarely flooded-----	80	Very limited Flooding	1.00	Very limited Flooding	1.00	Very limited Flooding	1.00
298257 Wallpack-----	85	Somewhat limited Slope Depth to thin cemented pan	0.63 0.50	Somewhat limited Slope	0.63	Very limited Slope	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 8.--Dwellings and Small Commercial Buildings--Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
298258 Wallpack-----	85	Very limited Slope Depth to thin cemented pan	1.00 0.50	Very limited Slope	1.00	Very limited Slope	1.00
298259 Wallpack, extremely stony-----	85	Somewhat limited Depth to thin cemented pan	0.50	Not limited		Not limited	
298260 Wallpack, extremely stony-----	85	Somewhat limited Slope Depth to thin cemented pan	0.63 0.50	Somewhat limited Slope	0.63	Very limited Slope	1.00
298261 Wallpack-----	85	Somewhat limited Depth to thin cemented pan	0.50	Not limited		Not limited	
298262 Wallpack, extremely stony-----	85	Very limited Slope Depth to thin cemented pan	1.00 0.50	Very limited Slope	1.00	Very limited Slope	1.00
298265 Venango, extremely stony-----	90	Very limited Depth to saturated zone Depth to thin cemented pan	1.00 0.50	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
298266 Venango, extremely stony-----	85	Very limited Depth to saturated zone Slope Depth to thin cemented pan	1.00 0.63 0.50	Very limited Depth to saturated zone Slope	1.00 0.63	Very limited Slope Depth to saturated zone	1.00 1.00
298409 Swartswood, extremely stony----	90	Somewhat limited Depth to thin cemented pan	0.50	Not limited		Not limited	
298411 Swartswood, extremely stony----	90	Somewhat limited Slope Depth to thin cemented pan	0.63 0.50	Somewhat limited Slope	0.63	Very limited Slope	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 8.--Dwellings and Small Commercial Buildings--Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
298413 Swartswood, extremely stony----	85	Very limited Slope Depth to thin cemented pan	1.00 0.50	Very limited Slope	1.00	Very limited Slope	1.00
318498 Hazen, very stony---	60	Not limited		Not limited		Somewhat limited Slope	0.50
Hoosic, very stony--	35	Not limited		Not limited		Somewhat limited Slope	0.50
318533 Hazen, very stony---	50	Not limited		Not limited		Not limited	
Hoosic, very stony--	40	Not limited		Not limited		Not limited	
319783 Catden-----	85	Very limited Ponding Depth to saturated zone Organic matter content	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Organic matter content	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Organic matter content	1.00 1.00 1.00
319784 Fredon, very stony--	50	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
Halsey, very stony--	40	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
543222 Andover, extremely stony-----	55	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
Buchanan, extremely stony-----	40	Somewhat limited Depth to saturated zone Depth to thin cemented pan	0.81 0.50	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.81
543243 Berk-----	65	Very limited Slope Depth to hard bedrock	1.00 0.20	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 0.20
Weikert-----	25	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 8.--Dwellings and Small Commercial Buildings--Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
543246 Buchanan-----	75	Somewhat limited Depth to saturated zone Depth to thin cemented pan	0.81 0.50	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone Slope	0.81 0.50
543247 Buchanan, extremely stony-----	80	Somewhat limited Depth to saturated zone Depth to thin cemented pan	0.81 0.50	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.81
543257 Chippewa-----	90	Very limited Depth to saturated zone Depth to thin cemented pan	1.00 0.50	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
543258 Chippewa-----	90	Very limited Depth to saturated zone Depth to thin cemented pan	1.00 0.50	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone Slope	1.00 0.12
543259 Chippewa, extremely stony-----	90	Very limited Depth to saturated zone Depth to thin cemented pan	1.00 0.50	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
543271 Delaware-----	90	Very limited Flooding	1.00	Very limited Flooding	1.00	Very limited Flooding	1.00
543276 Fluvaquents-----	85	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Flooding Depth to saturated zone	1.00 1.00
543292 Hazleton, extremely stony-----	90	Very limited Slope Large stones	1.00 0.10	Very limited Slope Large stones Depth to hard bedrock	1.00 0.10 0.08	Very limited Slope Large stones	1.00 0.10
543293 Hazleton, extremely stony-----	90	Very limited Slope Large stones	1.00 0.10	Very limited Slope Large stones	1.00 0.10	Very limited Slope Large stones	1.00 0.10

# Soil Survey of Delaware Water Gap National Recreation Area

Table 8.--Dwellings and Small Commercial Buildings--Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
543299 Laidig, extremely stony-----	90	Somewhat limited Depth to thin cemented pan	0.50	Somewhat limited Depth to saturated zone	0.90	Not limited	
543300 Laidig, extremely stony-----	90	Very limited Slope Depth to thin cemented pan	1.00 0.50	Very limited Slope Depth to saturated zone	1.00 0.90	Very limited Slope	1.00
543304 Laidig-----	50	Very limited Slope Depth to thin cemented pan	1.00 0.50	Very limited Slope Depth to saturated zone	1.00 0.90	Very limited Slope	1.00
Rubble land-----	40	Very limited Slope Large stones	1.00 1.00	Very limited Slope Large stones	1.00 1.00	Very limited Slope Large stones	1.00 1.00
543318 Rubble land-----	75	Very limited Large stones Slope	1.00 1.00	Very limited Large stones Slope	1.00 1.00	Very limited Large stones Slope	1.00 1.00
543327 Swartswood-----	90	Somewhat limited Depth to thin cemented pan	0.50	Somewhat limited Depth to saturated zone	0.98	Somewhat limited Slope	0.50
543328 Swartswood-----	90	Somewhat limited Slope Depth to thin cemented pan	0.63 0.50	Somewhat limited Depth to saturated zone Slope	0.98 0.63	Very limited Slope	1.00
543330 Swartswood, extremely stony----	50	Somewhat limited Depth to thin cemented pan	0.50	Somewhat limited Depth to saturated zone	0.98	Not limited	
Wurtsboro, extremely stony----	30	Somewhat limited Depth to thin cemented pan Depth to saturated zone	0.50 0.39	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.39
543331 Swartswood, extremely stony----	50	Very limited Slope Depth to thin cemented pan	1.00 0.50	Very limited Slope Depth to saturated zone	1.00 0.98	Very limited Slope	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 8.--Dwellings and Small Commercial Buildings--Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
543331 Wurtsboro, extremely stony----	30	Very limited Slope Depth to thin cemented pan Depth to saturated zone	1.00 0.50 0.39	Very limited Depth to saturated zone Slope	1.00 1.00	Very limited Slope Depth to saturated zone	1.00 0.39
543359 Volusia-----	85	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone Slope	1.00 0.12
543360 Volusia, extremely stony-----	85	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
543374 Wurtsboro-----	90	Somewhat limited Depth to thin cemented pan Depth to saturated zone	0.50 0.39	Very limited Depth to saturated zone	1.00	Somewhat limited Slope Depth to saturated zone	0.50 0.39
543375 Wurtsboro-----	90	Somewhat limited Slope Depth to thin cemented pan Depth to saturated zone	0.63 0.50 0.39	Very limited Depth to saturated zone Slope	1.00 0.63	Very limited Slope Depth to saturated zone	1.00 0.39
612280 Scio-----	80	Somewhat limited Depth to saturated zone	0.77	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.77
612666 Colonie-----	80	Not limited		Not limited		Not limited	
612668 Hoosic, very stony--	60	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Very limited Slope	1.00
Hazen, very stony---	30	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Very limited Slope	1.00
612724 Lordstown, very rocky-----	50	Very limited Slope Depth to hard bedrock	1.00 0.06	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 0.06



# Soil Survey of Delaware Water Gap National Recreation Area

Table 8.--Dwellings and Small Commercial Buildings--Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
612724 Wallpack, very rocky	40	Very limited Slope Depth to thin cemented pan	1.00 0.50	Very limited Slope	1.00	Very limited Slope	1.00
612732 Atherton, very poorly drained-----	60	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
Atherton, poorly drained-----	30	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
612738 Fluvaquents, occasionally flooded-----	90	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Flooding Depth to saturated zone	1.00 1.00
612753 Wallpack, aeolian mantle, very stony-	85	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Very limited Slope	1.00
612756 Wallpack, aeolian mantle, very stony-	85	Not limited		Not limited		Not limited	
612757 Wallpack, aeolian mantle, very stony-	85	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
612767 Wellsboro, extremely stony----	85	Somewhat limited Slope Depth to thin cemented pan Depth to saturated zone	0.63 0.50 0.39	Very limited Depth to saturated zone Slope	1.00 0.63	Very limited Slope Depth to saturated zone	1.00 0.39
612768 Wellsboro, extremely stony----	85	Somewhat limited Depth to thin cemented pan Depth to saturated zone	0.50 0.39	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.39

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Table 8.--Dwellings and Small Commercial Buildings--Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
613393 Alden, extremely stony-----	90	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
613447 Unadilla-----	85	Not limited		Not limited		Not limited	
613448 Unadilla-----	85	Not limited		Not limited		Somewhat limited Slope	0.50
614075 Wurtsboro, extremely stony----	80	Very limited Slope Depth to saturated zone Depth to thin cemented pan	1.00 0.98 0.50	Very limited Slope Depth to saturated zone	1.00 1.00	Very limited Slope Depth to saturated zone	1.00 0.98
Swartswood, extremely stony----	20	Very limited Slope Depth to thin cemented pan	1.00 0.50	Very limited Slope	1.00	Very limited Slope	1.00
620179 Arnot, very rocky---	55	Very limited Depth to hard bedrock	1.00	Very limited Depth to hard bedrock	1.00	Very limited Depth to hard bedrock Slope	1.00 1.00
Lordstown, very rocky-----	40	Somewhat limited Depth to hard bedrock	0.06	Very limited Depth to hard bedrock	1.00	Very limited Slope Depth to hard bedrock	1.00 0.06
620180 Arnot-----	45	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00
Lordstown-----	40	Very limited Slope Depth to hard bedrock	1.00 0.06	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 0.06
Rock outcrop-----	15	Not rated		Not rated		Not rated	
620181 Arnot-----	60	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 8.--Dwellings and Small Commercial Buildings--Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
620181 Lordstown-----	25	Very limited Slope Depth to hard bedrock	1.00 0.06	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 0.06
Rock outcrop-----	15	Not rated		Not rated		Not rated	
623089 Chippewa, extremely stony-----	80	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
623109 Farmington-----	50	Very limited Depth to hard bedrock	1.00	Very limited Depth to hard bedrock	1.00	Very limited Depth to hard bedrock Slope	1.00 1.00
Rock outcrop-----	40	Not rated		Not rated		Not rated	
624811 Galway, very rocky--	80	Very limited Slope Depth to hard bedrock	1.00 0.90	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 0.90
624813 Lackawanna, extremely stony----	85	Somewhat limited Depth to thin cemented pan	0.50	Not limited		Not limited	
624816 Lordstown, very rocky-----	50	Somewhat limited Slope Depth to hard bedrock	0.63 0.06	Very limited Depth to hard bedrock Slope	1.00 0.63	Very limited Slope Depth to hard bedrock	1.00 0.06
Wallpack, very rocky	35	Somewhat limited Slope Depth to thin cemented pan	0.63 0.50	Somewhat limited Slope	0.63	Very limited Slope	1.00
624822 Lordstown-----	50	Very limited Slope Depth to hard bedrock	1.00 0.06	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 0.06
Wallpack-----	35	Very limited Slope Depth to thin cemented pan	1.00 0.50	Very limited Slope	1.00	Very limited Slope	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 8.--Dwellings and Small Commercial Buildings--Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
624823							
Lordstown-----	50	Somewhat limited Slope	0.63	Very limited Depth to hard bedrock	1.00	Very limited Slope	1.00
		Depth to hard bedrock	0.06	Slope	0.63	Depth to hard bedrock	0.06
Wallpack-----	35	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Very limited Slope	1.00
		Depth to thin cemented pan	0.50				
624824							
Lordstown-----	50	Somewhat limited Depth to hard bedrock	0.06	Very limited Depth to hard bedrock	1.00	Somewhat limited Depth to hard bedrock	0.06
Wallpack-----	35	Somewhat limited Depth to thin cemented pan	0.50	Not limited		Not limited	
624826							
Manlius, very rocky-	60	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
		Depth to hard bedrock	0.71	Depth to hard bedrock	1.00	Depth to hard bedrock	0.71
		Large stones	0.42	Large stones	0.42	Large stones	0.42
Nassau, very rocky--	25	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Large stones	0.39	Large stones	0.39	Large stones	0.39
624827							
Nassau, very rocky--	55	Very limited Depth to hard bedrock	1.00	Very limited Depth to hard bedrock	1.00	Very limited Depth to hard bedrock	1.00
		Large stones	0.15	Large stones	0.15	Large stones	0.15
Manlius, very rocky-	44	Somewhat limited Depth to hard bedrock	0.54	Very limited Depth to hard bedrock	1.00	Somewhat limited Depth to hard bedrock	0.54
		Large stones	0.33	Large stones	0.33	Large stones	0.33
624828							
Nassau, very rocky--	55	Very limited Depth to hard bedrock	1.00	Very limited Depth to hard bedrock	1.00	Very limited Slope	1.00
		Slope	0.63	Slope	0.63	Depth to hard bedrock	1.00
		Large stones	0.15	Large stones	0.15	Large stones	0.15
Manlius, very rocky-	44	Somewhat limited Slope	0.63	Very limited Depth to hard bedrock	1.00	Very limited Slope	1.00
		Depth to hard bedrock	0.54	Slope	0.63	Depth to hard bedrock	0.54
		Large stones	0.33	Large stones	0.33	Large stones	0.33

# Soil Survey of Delaware Water Gap National Recreation Area

Table 8.--Dwellings and Small Commercial Buildings--Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
624829 Nassau, very rocky--	55	Very limited Slope Depth to hard bedrock Large stones	1.00 1.00 0.15	Very limited Slope Depth to hard bedrock Large stones	1.00 1.00 0.15	Very limited Slope Depth to hard bedrock Large stones	1.00 1.00 0.15
Manlius, very rocky-	44	Very limited Slope Depth to hard bedrock Large stones	1.00 0.54 0.33	Very limited Slope Depth to hard bedrock Large stones	1.00 1.00 0.33	Very limited Slope Depth to hard bedrock Large stones	1.00 0.54 0.33
624832 Nassau-----	50	Very limited Slope Depth to hard bedrock Large stones	1.00 1.00 0.39	Very limited Slope Depth to hard bedrock Large stones	1.00 1.00 0.39	Very limited Slope Depth to hard bedrock Large stones	1.00 1.00 0.39
Rock outcrop-----	45	Not rated		Not rated		Not rated	
624841 Oquaga-----	60	Very limited Slope Depth to hard bedrock Large stones	1.00 0.84 0.01	Very limited Slope Depth to hard bedrock Large stones	1.00 1.00 0.01	Very limited Slope Depth to hard bedrock Large stones	1.00 0.84 0.01
Rock outcrop-----	25	Not rated		Not rated		Not rated	
624845 Rock outcrop-----	45	Not rated		Not rated		Not rated	
Farmington-----	35	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00
Galway-----	20	Very limited Slope Depth to hard bedrock	1.00 0.90	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 0.90
624846 Rock outcrop-----	40	Not rated		Not rated		Not rated	
Arnot-----	30	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00
Rubble land-----	20	Very limited Slope Large stones	1.00 1.00	Very limited Slope Large stones	1.00 1.00	Very limited Slope Large stones	1.00 1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 8.--Dwellings and Small Commercial Buildings--Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
626816 Udifluvents, occasionally flooded-----	90	Very limited Flooding	1.00	Very limited Flooding Depth to saturated zone	1.00 0.87	Very limited Flooding	1.00
635458 Oquaga, very rocky--	55	Somewhat limited Depth to hard bedrock Slope Large stones	0.84 0.63 0.01	Very limited Depth to hard bedrock Slope Large stones	1.00 0.63 0.01	Very limited Slope Depth to hard bedrock Large stones	1.00 0.84 0.01
Lackawanna, very rocky-----	30	Somewhat limited Slope Depth to thin cemented pan	0.63 0.50	Somewhat limited Slope	0.63	Very limited Slope	1.00
635459 Oquaga, very rocky--	50	Very limited Slope Depth to hard bedrock Large stones	1.00 0.84 0.01	Very limited Slope Depth to hard bedrock Large stones	1.00 1.00 0.01	Very limited Slope Depth to hard bedrock Large stones	1.00 0.84 0.01
Lackawanna, very rocky-----	35	Very limited Slope Depth to thin cemented pan	1.00 0.50	Very limited Slope	1.00	Very limited Slope	1.00
740953 Delaware, rarely flooded-----	80	Very limited Flooding	1.00	Very limited Flooding	1.00	Very limited Flooding	1.00
740968 Nassau, very rocky--	55	Very limited Depth to hard bedrock Slope Large stones	1.00 0.63 0.15	Very limited Depth to hard bedrock Slope Large stones	1.00 0.63 0.15	Very limited Slope Depth to hard bedrock Large stones	1.00 1.00 0.15
Manlius, very rocky-	44	Somewhat limited Slope Depth to hard bedrock Large stones	0.63 0.54 0.33	Very limited Depth to hard bedrock Slope Large stones	1.00 0.63 0.33	Very limited Slope Depth to hard bedrock Large stones	1.00 0.54 0.33
740969 Nassau, very rocky--	55	Very limited Slope Depth to hard bedrock Large stones	1.00 1.00 0.15	Very limited Slope Depth to hard bedrock Large stones	1.00 1.00 0.15	Very limited Slope Depth to hard bedrock Large stones	1.00 1.00 0.15

# Soil Survey of Delaware Water Gap National Recreation Area

Table 8.--Dwellings and Small Commercial Buildings--Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
740969 Manlius, very rocky-	44	Very limited Slope Depth to hard bedrock Large stones	1.00 0.54 0.33	Very limited Slope Depth to hard bedrock Large stones	1.00 1.00 0.33	Very limited Slope Depth to hard bedrock Large stones	1.00 0.54 0.33
740971 Oquaga, very rocky--	55	Somewhat limited Depth to hard bedrock Slope Large stones	0.84 0.63 0.01	Very limited Depth to hard bedrock Slope Large stones	1.00 0.63 0.01	Very limited Slope Depth to hard bedrock Large stones	1.00 0.84 0.01
Lackawanna, very rocky-----	30	Somewhat limited Slope Depth to thin cemented pan	0.63 0.50	Somewhat limited Slope	0.63	Very limited Slope	1.00
740972 Oquaga, very rocky--	50	Very limited Slope Depth to hard bedrock Large stones	1.00 0.84 0.01	Very limited Slope Depth to hard bedrock Large stones	1.00 1.00 0.01	Very limited Slope Depth to hard bedrock Large stones	1.00 0.84 0.01
Lackawanna, very rocky-----	35	Very limited Slope Depth to thin cemented pan	1.00 0.50	Very limited Slope	1.00	Very limited Slope	1.00
740974 Oquaga-----	60	Very limited Slope Depth to hard bedrock Large stones	1.00 0.84 0.01	Very limited Slope Depth to hard bedrock Large stones	1.00 1.00 0.01	Very limited Slope Depth to hard bedrock Large stones	1.00 0.84 0.01
Rock outcrop-----	25	Not rated		Not rated		Not rated	
740975 Rock outcrop-----	40	Not rated		Not rated		Not rated	
Arnot-----	30	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00
Rubble land-----	20	Very limited Slope Large stones	1.00 1.00	Very limited Slope Large stones	1.00 1.00	Very limited Slope Large stones	1.00 1.00
740987 Scio-----	80	Somewhat limited Depth to saturated zone	0.77	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.77

# Soil Survey of Delaware Water Gap National Recreation Area

Table 8.--Dwellings and Small Commercial Buildings--Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
740988 Udifluents, occasionally flooded-----	90	Very limited Flooding	1.00	Very limited Flooding Depth to saturated zone	1.00 0.87	Very limited Flooding	1.00
740991 Unadilla-----	85	Not limited		Not limited		Not limited	
740992 Unadilla-----	85	Not limited		Not limited		Somewhat limited Slope	0.50
740995 Wellsboro, extremely stony----	85	Somewhat limited Depth to thin cemented pan Depth to saturated zone	0.50 0.39	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.39
740996 Wellsboro, extremely stony----	85	Somewhat limited Slope Depth to thin cemented pan Depth to saturated zone	0.63 0.50 0.39	Very limited Depth to saturated zone Slope	1.00 0.63	Very limited Slope Depth to saturated zone	1.00 0.39
741149 Lackawanna, extremely stony----	85	Somewhat limited Slope Depth to thin cemented pan	0.63 0.50	Somewhat limited Slope	0.63	Very limited Slope	1.00
741150 Lackawanna, extremely stony----	85	Very limited Slope Depth to thin cemented pan	1.00 0.50	Very limited Slope	1.00	Very limited Slope	1.00
801114 Oquaga-----	75	Somewhat limited Depth to hard bedrock Large stones	0.84 0.01	Very limited Depth to hard bedrock Large stones	1.00 0.01	Very limited Slope Depth to hard bedrock Large stones	1.00 0.84 0.01
Rock outcrop-----	15	Not rated		Not rated		Not rated	
810906 Oquaga-----	75	Somewhat limited Depth to hard bedrock Large stones	0.84 0.01	Very limited Depth to hard bedrock Large stones	1.00 0.01	Very limited Slope Depth to hard bedrock Large stones	1.00 0.84 0.01



# Soil Survey of Delaware Water Gap National Recreation Area

Table 8.--Dwellings and Small Commercial Buildings--Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
810906 Rock outcrop-----	15	Not rated		Not rated		Not rated	
1147465 Alden, extremely stony-----	90	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
1147467 Arnot, very rocky---	55	Very limited Depth to hard bedrock	1.00	Very limited Depth to hard bedrock	1.00	Very limited Depth to hard bedrock Slope	1.00 1.00
Lordstown, very rocky-----	40	Somewhat limited Depth to hard bedrock	0.06	Very limited Depth to hard bedrock	1.00	Very limited Slope Depth to hard bedrock	1.00 0.06
1147468 Arnot-----	45	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00
Lordstown-----	40	Very limited Slope Depth to hard bedrock	1.00 0.06	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 0.06
Rock outcrop-----	15	Not rated		Not rated		Not rated	
1147469 Arnot-----	60	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00
Lordstown-----	25	Very limited Slope Depth to hard bedrock	1.00 0.06	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 0.06
Rock outcrop-----	15	Not rated		Not rated		Not rated	
1147470 Atherton, very poorly drained----	60	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
Atherton, poorly drained-----	30	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 8.--Dwellings and Small Commercial Buildings--Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1147471 Catden-----	85	Very limited Ponding Depth to saturated zone Organic matter content	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Organic matter content	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Organic matter content	1.00 1.00 1.00
1147474 Chippewa, extremely stony-----	80	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
1147475 Colonie-----	80	Not limited		Not limited		Not limited	
1147478 Delaware, rarely flooded-----	80	Very limited Flooding	1.00	Very limited Flooding	1.00	Very limited Flooding Slope	1.00 0.50
1147482 Fredon, very stony--	50	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
Halsey, very stony--	40	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
1147485 Hazen, very stony---	60	Not limited		Not limited		Somewhat limited Slope	0.50
Hoosic, very stony--	35	Not limited		Not limited		Somewhat limited Slope	0.50
1147490 Hoosic, very stony--	60	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Very limited Slope	1.00
Hazen, very stony---	30	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Very limited Slope	1.00
1147491 Hoosic, very stony--	50	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Otisville, very stony-----	40	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
1147492 Lackawanna, extremely stony----	85	Somewhat limited Depth to thin cemented pan	0.50	Not limited		Not limited	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 8.--Dwellings and Small Commercial Buildings--Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1147500 Wurtsboro, extremely stony----	90	Somewhat limited Depth to saturated zone Depth to thin cemented pan	0.98 0.50	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.98
1147501 Wurtsboro, extremely stony----	60	Somewhat limited Depth to saturated zone Depth to thin cemented pan	0.98 0.50	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.98
Swartswood, extremely stony----	40	Somewhat limited Depth to thin cemented pan	0.50	Not limited		Not limited	
1147502 Wurtsboro, extremely stony----	60	Somewhat limited Depth to saturated zone Slope Depth to thin cemented pan	0.98 0.63 0.50	Very limited Depth to saturated zone Slope	1.00 0.63	Very limited Slope Depth to saturated zone	1.00 0.98
Swartswood, extremely stony----	40	Somewhat limited Slope Depth to thin cemented pan	0.63 0.50	Somewhat limited Slope	0.63	Very limited Slope	1.00
1147527 Udorthents-----	60	Not limited		Not limited		Not limited	
Urban land-----	40	Not rated		Not rated		Not rated	
1147532 Udorthents-----	100	Not limited		Not limited		Not limited	
1147533 Wurtsboro, extremely stony----	80	Very limited Slope Depth to saturated zone Depth to thin cemented pan	1.00 0.98 0.50	Very limited Slope Depth to saturated zone	1.00 1.00	Very limited Slope Depth to saturated zone	1.00 0.98
Swartswood, extremely stony----	20	Very limited Slope Depth to thin cemented pan	1.00 0.50	Very limited Slope	1.00	Very limited Slope	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 8.--Dwellings and Small Commercial Buildings--Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1948749 Arnot-----	90	Very limited Depth to hard bedrock	1.00	Very limited Depth to hard bedrock	1.00	Very limited Depth to hard bedrock Slope	1.00 0.50
1948750 Arnot-----	90	Very limited Depth to hard bedrock Slope	1.00 0.63	Very limited Depth to hard bedrock Slope	1.00 0.63	Very limited Slope Depth to hard bedrock	1.00 1.00
1948751 Arnot-----	90	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00
1948774 Conotton-----	90	Not limited		Not limited		Somewhat limited Slope	0.50
1948775 Conotton-----	95	Somewhat limited Slope	0.63	Somewhat limited Slope	0.63	Very limited Slope	1.00
1948776 Conotton-----	95	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
1948777 Conotton-----	95	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
1948797 Manlius-----	90	Somewhat limited Depth to hard bedrock	0.29	Very limited Depth to hard bedrock	1.00	Somewhat limited Slope Depth to hard bedrock	0.50 0.29
1948802 Manlius-----	90	Somewhat limited Slope Depth to hard bedrock	0.63 0.29	Very limited Depth to hard bedrock Slope	1.00 0.63	Very limited Slope Depth to hard bedrock	1.00 0.29
1948818 Manlius-----	90	Very limited Slope Depth to hard bedrock	1.00 0.29	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 0.29
1948832 Penargyl-----	90	Not limited		Not limited		Somewhat limited Slope	0.50
1948846 Phelps-----	90	Somewhat limited Depth to saturated zone	0.77	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone Slope	0.77 0.12

# Soil Survey of Delaware Water Gap National Recreation Area

Table 8.--Dwellings and Small Commercial Buildings--Continued

Map unit symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1948855 Udorthents, loamy---	95	Somewhat limited Depth to saturated zone	0.81	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.81
1948989 Urban land-----	65	Not rated		Not rated		Not rated	
Delaware-----	25	Very limited Flooding	1.00	Very limited Flooding	1.00	Very limited Flooding	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping

[Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
290836 Hoosic, very stony--	50	Very limited Slope	1.00	Very limited Slope Unstable excavation walls	1.00 1.00	Very limited Slope Droughty	1.00 0.10
Otisville, very stony-----	40	Very limited Slope	1.00	Very limited Slope Unstable excavation walls	1.00 1.00	Very limited Slope Droughty	1.00 0.95
296265 Alden-----	100	Very limited Ponding Depth to saturated zone Frost action	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Unstable excavation walls	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
296269 Fluvents, (alluvial land)-----	70	Very limited Flooding Depth to saturated zone Frost action	1.00 0.75 0.50	Very limited Depth to saturated zone Unstable excavation walls Flooding	1.00 1.00 1.00 0.80	Very limited Flooding Depth to saturated zone Droughty	1.00 0.75 0.02
296271 Alvira-----	55	Very limited Depth to saturated zone Frost action	1.00 1.00	Very limited Depth to saturated zone Unstable excavation walls	1.00 1.00	Very limited Depth to saturated zone Large stones	1.00 0.26
Watson-----	35	Somewhat limited Low strength Depth to saturated zone Shrink-swell Frost action	0.78 0.75 0.50 0.50	Very limited Depth to saturated zone Unstable excavation walls	1.00 1.00	Somewhat limited Depth to saturated zone Large stones	0.75 0.16
296272 Bath-----	85	Somewhat limited Frost action Depth to saturated zone	0.50 0.14	Very limited Depth to saturated zone Unstable excavation walls	1.00 0.10	Somewhat limited Gravel Depth to saturated zone Large stones	0.24 0.14 0.08

# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296273 Bath-----	85	Somewhat limited Slope Frost action Depth to saturated zone	 0.63 0.50 0.14	Very limited Depth to saturated zone Slope Unstable excavation walls	 1.00  0.63 0.10	Somewhat limited Slope Gravel Depth to saturated zone Large stones	 0.63 0.24 0.14  0.08
296274 Bath-----	85	Very limited Slope Frost action Depth to saturated zone	 1.00 0.50 0.14	Very limited Slope Depth to saturated zone Unstable excavation walls	 1.00 1.00  0.10	Very limited Slope Gravel Depth to saturated zone Large stones	 1.00 0.24 0.14  0.08
296275 Bath-----	90	Somewhat limited Frost action Depth to saturated zone	 0.50 0.14	Very limited Depth to saturated zone Unstable excavation walls	 1.00  0.10	Somewhat limited Large stones Depth to saturated zone Gravel	 0.54 0.14  0.11
296276 Bath-----	90	Very limited Slope Frost action Depth to saturated zone	 1.00 0.50 0.14	Very limited Depth to saturated zone Slope Unstable excavation walls	 1.00 1.00  0.10	Very limited Slope Large stones Depth to saturated zone Gravel	 1.00 0.54 0.14  0.11
296277 Benson-----	55	Very limited Depth to hard bedrock Frost action Large stones	 1.00  0.50 0.02	Very limited Depth to hard bedrock Unstable excavation walls Large stones	 1.00  0.10 0.02	Very limited Depth to bedrock Droughty Large stones	 1.00 0.88 0.68
296278 Benson-----	60	Very limited Depth to hard bedrock Slope Frost action Large stones	 1.00  1.00 0.50 0.02	Very limited Depth to hard bedrock Slope Unstable excavation walls Large stones	 1.00  1.00 0.10 0.02	Very limited Depth to bedrock Slope Droughty Large stones	 1.00 1.00 0.88 0.68
Rock outcrop-----	20	Not rated		Not rated		Not rated	
296279 Benson-----	60	Very limited Depth to hard bedrock Slope Frost action Large stones	 1.00  1.00 0.50 0.02	Very limited Depth to hard bedrock Slope Unstable excavation walls Large stones	 1.00  1.00 0.10 0.02	Very limited Depth to bedrock Slope Droughty Large stones	 1.00 1.00 0.88 0.68
Rock outcrop-----	25	Not rated		Not rated		Not rated	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296280 Braceville-----	90	Somewhat limited Frost action Depth to saturated zone	0.50 0.03	Very limited Depth to saturated zone Unstable excavation walls	1.00 1.00	Somewhat limited Gravel Depth to saturated zone Droughty	0.04 0.03 0.03
296281 Braceville-----	90	Somewhat limited Frost action Depth to saturated zone	0.50 0.03	Very limited Depth to saturated zone Unstable excavation walls	1.00 1.00	Somewhat limited Gravel Depth to saturated zone Droughty	0.04 0.03 0.03
296283 Buchanan-----	90	Somewhat limited Frost action Depth to saturated zone	0.50 0.03	Very limited Depth to saturated zone Unstable excavation walls	1.00 1.00	Very limited Large stones Depth to saturated zone	1.00 0.03
296288 Chippewa-----	48	Very limited Depth to saturated zone Frost action	1.00 1.00	Very limited Depth to saturated zone Unstable excavation walls Dense layer	1.00 1.00 0.50	Very limited Depth to saturated zone Droughty	1.00 0.43
Norwich-----	48	Very limited Depth to saturated zone Frost action	1.00 1.00	Very limited Depth to saturated zone Dense layer Unstable excavation walls	1.00 0.50 0.10	Very limited Depth to saturated zone Droughty	1.00 0.24
296289 Chippewa-----	47	Very limited Depth to saturated zone Frost action	1.00 1.00	Very limited Depth to saturated zone Unstable excavation walls Dense layer	1.00 1.00 0.50	Very limited Depth to saturated zone Large stones Droughty Gravel	1.00 0.88 0.65 0.01
Norwich-----	47	Very limited Depth to saturated zone Frost action	1.00 1.00	Very limited Depth to saturated zone Dense layer Unstable excavation walls	1.00 0.50 0.10	Very limited Depth to saturated zone Large stones Droughty	1.00 1.00 0.36
296295 Udorthents, cut and fill-----	90	Not rated		Not rated		Not rated	



# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296297 Dekalb-----	100	Very limited Slope Depth to hard bedrock Large stones	1.00 0.29 0.03	Very limited Depth to hard bedrock Slope Unstable excavation walls Large stones	1.00 1.00 0.10 0.03	Very limited Large stones Slope Droughty Depth to bedrock	1.00 1.00 0.60 0.29
296298 Dekalb-----	100	Very limited Slope Depth to hard bedrock Large stones	1.00 0.29 0.03	Very limited Depth to hard bedrock Slope Unstable excavation walls Large stones	1.00 1.00 0.10 0.03	Very limited Slope Large stones Droughty Depth to bedrock	1.00 1.00 0.60 0.29
296303 Hazleton-----	100	Very limited Slope Frost action Large stones	1.00 0.50 0.07	Very limited Slope Unstable excavation walls Large stones Depth to hard bedrock	1.00 0.10 0.07 0.01	Very limited Large stones Slope	1.00 1.00
296304 Holly-----	100	Very limited Depth to saturated zone Frost action Flooding	1.00 1.00 1.00	Very limited Depth to saturated zone Unstable excavation walls Flooding	1.00 1.00 0.80	Very limited Flooding Depth to saturated zone	1.00 1.00
296311 Lackawanna-----	40	Very limited Slope Frost action Depth to saturated zone	1.00 0.50 0.12	Very limited Slope Depth to saturated zone Unstable excavation walls	1.00 1.00 0.10	Very limited Slope Large stones Depth to saturated zone	1.00 1.00 0.12
Bath-----	30	Very limited Slope Frost action Depth to saturated zone	1.00 0.50 0.14	Very limited Slope Depth to saturated zone Unstable excavation walls	1.00 1.00 0.10	Very limited Slope Large stones Depth to saturated zone Gravel	1.00 1.00 0.14 0.01
296312 Lackawanna-----	80	Somewhat limited Frost action Depth to saturated zone	0.50 0.12	Very limited Depth to saturated zone Unstable excavation walls	1.00 0.10	Very limited Large stones Depth to saturated zone	1.00 0.12

# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296313 Lackawanna-----	80	Somewhat limited Slope Frost action Depth to saturated zone	 0.63 0.50 0.12	Very limited Depth to saturated zone Slope Unstable excavation walls	 1.00  0.63 0.10	Very limited Large stones Slope Depth to saturated zone	 1.00 0.63 0.12
296315 Lackawanna-----	80	Somewhat limited Frost action Depth to saturated zone	 0.50 0.12	Very limited Depth to saturated zone Unstable excavation walls	 1.00  0.10	Very limited Large stones Depth to saturated zone	 1.00 0.12
296316 Lackawanna-----	80	Very limited Slope Frost action Depth to saturated zone	 1.00 0.50 0.12	Very limited Depth to saturated zone Slope Unstable excavation walls	 1.00  1.00 0.10	Very limited Large stones Slope Depth to saturated zone	 1.00 1.00 0.12
296317 Laidig-----	100	Somewhat limited Frost action	 0.50	Very limited Depth to saturated zone Unstable excavation walls	 1.00  1.00	Very limited Large stones Droughty	 1.00 0.01
296326 Lordstown-----	85	Somewhat limited Frost action Depth to hard bedrock Large stones	 0.50 0.46 0.10	Very limited Depth to hard bedrock Large stones Unstable excavation walls	 1.00  0.10 0.10	Very limited Large stones Depth to bedrock	 1.00 0.46
296327 Lordstown-----	85	Very limited Slope Frost action Depth to hard bedrock Large stones	 1.00 0.50 0.46 0.10	Very limited Depth to hard bedrock Slope Large stones Unstable excavation walls	 1.00  1.00 0.10 0.10	Very limited Large stones Slope Depth to bedrock	 1.00 1.00 0.46
296328 Lordstown-----	40	Very limited Slope Frost action Depth to hard bedrock	 1.00 0.50 0.46	Very limited Depth to hard bedrock Slope Unstable excavation walls	 1.00  1.00 0.10	Very limited Slope Large stones Depth to bedrock Droughty	 1.00 1.00 0.46 0.01
Oquaga-----	35	Very limited Slope Frost action Depth to hard bedrock	 1.00 0.50 0.46	Very limited Depth to hard bedrock Slope Unstable excavation walls	 1.00  1.00 0.10	Very limited Slope Large stones Droughty Depth to bedrock Gravel	 1.00 1.00 0.70 0.46 0.08

# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296329 Mardin-----	85	Somewhat limited Depth to saturated zone Frost action	0.94 0.50	Very limited Depth to saturated zone Unstable excavation walls	1.00 0.10	Somewhat limited Depth to saturated zone Droughty Gravel Large stones	0.94 0.27 0.24 0.08
296330 Mardin-----	85	Somewhat limited Depth to saturated zone Slope Frost action	0.94 0.63 0.50	Very limited Depth to saturated zone Slope Unstable excavation walls	1.00 0.63 0.10	Somewhat limited Depth to saturated zone Slope Droughty Gravel Large stones	0.94 0.63 0.27 0.24 0.08
296331 Mardin-----	85	Somewhat limited Depth to saturated zone Frost action	0.94 0.50	Very limited Depth to saturated zone Unstable excavation walls	1.00 0.10	Somewhat limited Depth to saturated zone Large stones Droughty Gravel	0.94 0.46 0.39 0.01
296332 Mardin-----	87	Very limited Slope Depth to saturated zone Frost action	1.00 0.94 0.50	Very limited Depth to saturated zone Slope Unstable excavation walls	1.00 1.00 0.10	Very limited Slope Depth to saturated zone Large stones Droughty Gravel	1.00 0.94 0.46 0.39 0.01
296335 Meckesville-----	100	Somewhat limited Slope Frost action	0.63 0.50	Somewhat limited Depth to saturated zone Slope Unstable excavation walls	0.98 0.63 0.10	Somewhat limited Slope Gravel Large stones	0.63 0.16 0.03
296337 Meckesville-----	100	Very limited Slope Frost action	1.00 0.50	Very limited Slope Depth to saturated zone Unstable excavation walls	1.00 0.98 0.10	Very limited Slope Large stones	1.00 0.26
296338 Morris-----	80	Very limited Depth to saturated zone Frost action	1.00 1.00	Very limited Depth to saturated zone Dense layer Unstable excavation walls	1.00 0.50 0.10	Very limited Depth to saturated zone Droughty Gravel Large stones	1.00 0.34 0.29 0.03

# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296339 Morris-----	75	Very limited Depth to saturated zone Frost action	1.00 1.00	Very limited Depth to saturated zone Unstable excavation walls Dense layer	1.00 1.00 0.50	Very limited Depth to saturated zone Large stones	1.00 1.00
296340 Morris-----	80	Very limited Depth to saturated zone Frost action Slope	1.00 1.00 0.16	Very limited Depth to saturated zone Unstable excavation walls Dense layer Slope	1.00 1.00 0.50 0.16	Very limited Depth to saturated zone Large stones Slope	1.00 1.00 0.16
296341 Freetown, mucky peat	100	Very limited Ponding Depth to saturated zone Frost action	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Not rated	
296342 Paupack, mucky peat (shallow)-----	100	Very limited Ponding Depth to saturated zone Subsidence Frost action	1.00 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Unstable excavation walls	1.00 1.00 0.10	Very limited Ponding Depth to saturated zone	1.00 1.00
296343 Oquaga-----	50	Somewhat limited Frost action Depth to hard bedrock	0.50 0.46	Very limited Depth to hard bedrock Unstable excavation walls	1.00 0.10	Somewhat limited Droughty Gravel Depth to bedrock Large stones	0.70 0.62 0.46 0.20
Lackawanna-----	35	Somewhat limited Frost action Depth to saturated zone	0.50 0.12	Very limited Depth to saturated zone Unstable excavation walls	1.00 0.10	Somewhat limited Gravel Depth to saturated zone Large stones	0.62 0.12 0.03
296344 Oquaga-----	55	Somewhat limited Slope Frost action Depth to hard bedrock	0.63 0.50 0.46	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 0.63 0.10	Somewhat limited Droughty Slope Gravel Depth to bedrock Large stones	0.70 0.63 0.62 0.46 0.20
Lackawanna-----	30	Somewhat limited Slope Frost action Depth to saturated zone	0.63 0.50 0.12	Very limited Depth to saturated zone Slope Unstable excavation walls	1.00 0.63 0.10	Somewhat limited Slope Gravel Depth to saturated zone Large stones	0.63 0.62 0.12 0.03

# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296346 Oquaga-----	50	Somewhat limited Frost action Depth to hard bedrock	0.50 0.46	Very limited Depth to hard bedrock Unstable excavation walls	1.00 0.10	Very limited Large stones Droughty Depth to bedrock Gravel	1.00 0.70 0.46 0.08
Lackawanna-----	35	Somewhat limited Frost action Depth to saturated zone saturated zone	0.50 0.12	Very limited Depth to saturated zone Unstable excavation walls	1.00 0.10	Very limited Large stones Depth to saturated zone	1.00 0.12
296347 Oquaga-----	60	Very limited Slope Frost action Depth to hard bedrock	1.00 0.50 0.46	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 0.10	Very limited Large stones Slope Droughty Depth to bedrock Gravel	1.00 1.00 0.70 0.46 0.08
Lackawanna-----	30	Very limited Slope Frost action Depth to saturated zone	1.00 0.50 0.12	Very limited Depth to saturated zone Slope Unstable excavation walls	1.00 1.00 0.10	Very limited Large stones Slope Depth to saturated zone	1.00 1.00 0.12
296348 Philo-----	85	Very limited Flooding Frost action Depth to saturated zone	1.00 0.50 0.03	Very limited Depth to saturated zone Unstable excavation walls Flooding	1.00 1.00 0.80	Very limited Flooding Depth to saturated zone	1.00 0.03
296349 Pope-----	90	Very limited Flooding Frost action	1.00 0.50	Very limited Unstable excavation walls Flooding Depth to saturated zone	1.00 0.60 0.15	Somewhat limited Flooding	0.60
296350 Pope-----	90	Somewhat limited Frost action Flooding	0.50 0.40	Very limited Unstable excavation walls Depth to saturated zone	1.00 0.15	Not limited	
296351 Rexford, somewhat poorly drained----	40	Very limited Depth to saturated zone Frost action	1.00 1.00	Very limited Depth to saturated zone Unstable excavation walls	1.00 0.10	Very limited Depth to saturated zone Droughty	1.00 0.34

# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296351 Rexford, poorly drained-----	35	Very limited Depth to saturated zone Frost action	1.00 1.00	Very limited Depth to saturated zone Unstable excavation walls	1.00 0.10	Very limited Depth to saturated zone Droughty	1.00 0.34
296355 Sheffield-----	100	Very limited Ponding Depth to saturated zone Frost action Low strength	1.00 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Unstable excavation walls	1.00 1.00 0.10	Very limited Ponding Depth to saturated zone	1.00 1.00
296363 Dystrochrepts, very stony-----	85	Very limited Slope Frost action	1.00 0.50	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 0.10	Very limited Slope Large stones Gravel	1.00 0.32 0.07
296369 Wayland-----	100	Very limited Ponding Depth to saturated zone Frost action Flooding Low strength	1.00 1.00 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Unstable excavation walls Flooding	1.00 1.00 1.00 0.80	Very limited Ponding Flooding Depth to saturated zone	1.00 1.00 1.00
296376 Wellsboro-----	80	Very limited Frost action Depth to saturated zone	1.00 0.94	Very limited Depth to saturated zone Unstable excavation walls	1.00 0.10	Very limited Large stones Depth to saturated zone	1.00 0.94
296379 Wellsboro-----	85	Very limited Frost action Slope Depth to saturated zone	1.00 1.00 0.94	Very limited Depth to saturated zone Slope Unstable excavation walls	1.00 1.00 0.10	Very limited Large stones Slope Depth to saturated zone	1.00 1.00 0.94
296385 Wyoming-----	85	Not limited		Very limited Unstable excavation walls	1.00	Somewhat limited Droughty Gravel Large stones	0.81 0.76 0.03
296386 Wyoming-----	85	Not limited		Very limited Unstable excavation walls	1.00	Somewhat limited Droughty Gravel Large stones	0.81 0.76 0.03

# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296387 Wyoming-----	85	Somewhat limited Slope	0.63	Very limited Unstable excavation walls Slope	1.00 0.63	Somewhat limited Droughty Gravel Slope Large stones	0.81 0.76 0.63 0.03
296388 Wyoming-----	85	Very limited Slope	1.00	Very limited Slope Unstable excavation walls	1.00 1.00	Very limited Slope Droughty Gravel Large stones	1.00 0.81 0.76 0.03
296389 Wyoming-----	100	Very limited Slope	1.00	Very limited Slope Unstable excavation walls	1.00 1.00	Very limited Slope Droughty Gravel Large stones	1.00 0.78 0.76 0.03
296390 Water-----	100	Not rated		Not rated		Not rated	
297185 Edgemere-----	42	Very limited Ponding Depth to saturated zone Frost action	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Unstable excavation walls Dense layer	1.00 1.00 1.00 0.50	Very limited Ponding Depth to saturated zone Large stones	1.00 1.00 1.00
Shohola-----	42	Very limited Depth to saturated zone Frost action Slope	1.00 1.00 0.04	Very limited Depth to saturated zone Dense layer Unstable excavation walls Slope	1.00 0.50 0.10 0.04	Very limited Depth to saturated zone Large stones Droughty Slope	1.00 1.00 0.08 0.04
297186 Edgemere-----	75	Very limited Ponding Depth to saturated zone Frost action	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Unstable excavation walls Dense layer	1.00 1.00 1.00 0.50	Very limited Ponding Depth to saturated zone Large stones	1.00 1.00 1.00
297188 Manlius-----	40	Very limited Slope Frost action Depth to hard bedrock	1.00 0.50 0.46	Very limited Depth to hard bedrock Slope Dense layer Unstable excavation walls	1.00 1.00 0.50 0.10	Very limited Slope Gravel Droughty Large stones Depth to bedrock	1.00 0.90 0.69 0.61 0.46

# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
297188							
Arnot-----	35	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Large stones	0.10	Large stones	1.00
		Large stones	0.10	Unstable excavation walls	0.10	Droughty	1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
297189							
Manlius-----	40	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Gravel	0.90
		Depth to hard bedrock	0.46	Dense layer	0.50	Droughty	0.69
				Unstable excavation walls	0.10	Large stones	0.61
						Depth to bedrock	0.46
Arnot-----	35	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Large stones	0.10	Large stones	1.00
		Large stones	0.10	Unstable excavation walls	0.10	Droughty	1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
297190							
Braceville-----	82	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.48
		Depth to saturated zone	0.48	Unstable excavation walls	1.00		
297191							
Wyalusing-----	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Frost action	1.00	Unstable excavation walls	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	0.80		
297192							
Pope-----	95	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Flooding	0.80	Flooding	1.00
		Frost action	0.50	Unstable excavation walls	0.10		
297193							
Paupack-----	90	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Subsidence	1.00	Unstable excavation walls	0.10		
		Frost action	1.00				



# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
297196 Freetown-----	94	Very limited Ponding Depth to saturated zone Frost action	 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone	 1.00 1.00	Not rated	
297197 Manlius-----	90	Somewhat limited Frost action Depth to hard bedrock	 0.50 0.46	Very limited Depth to hard bedrock Dense layer Unstable excavation walls	 1.00  0.50 0.10	Somewhat limited Large stones Droughty Depth to bedrock Gravel	 0.54 0.51 0.46 0.19
297198 Manlius-----	86	Somewhat limited Slope Frost action Depth to hard bedrock	 0.63 0.50 0.46	Very limited Depth to hard bedrock Slope Dense layer Unstable excavation walls	 1.00  0.63 0.50 0.10	Somewhat limited Slope Large stones Droughty Depth to bedrock Gravel	 0.63 0.54 0.51 0.46 0.19
297201 Oquaga-----	75	Very limited Slope Frost action Depth to hard bedrock Large stones	 1.00 0.50 0.29  0.02	Very limited Depth to hard bedrock Slope Unstable excavation walls Large stones	 1.00  1.00 0.10  0.02	Very limited Slope Droughty Large stones Gravel Depth to bedrock	 1.00 0.77 0.54 0.45 0.29
297203 Delaware-----	93	Somewhat limited Frost action Flooding	 0.50 0.40	Somewhat limited Unstable excavation walls	 0.10	Not limited	
297204 Delaware-----	82	Somewhat limited Frost action Flooding	 0.50 0.40	Somewhat limited Unstable excavation walls	 0.10	Not limited	
297205 Delaware-----	80	Somewhat limited Slope Frost action Flooding	 0.96 0.50 0.40	Somewhat limited Slope Unstable excavation walls	 0.96 0.10	Somewhat limited Slope	 0.96
297209 Philo-----	85	Very limited Flooding Frost action Depth to saturated zone	 1.00 0.50 0.03	Very limited Depth to saturated zone Unstable excavation walls Flooding	 1.00  1.00  0.80	Very limited Flooding Depth to saturated zone	 1.00 0.03

# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
297210 Barbour-----	85	Very limited Flooding Frost action	1.00 0.50	Very limited Unstable excavation walls Flooding Depth to saturated zone	1.00 0.60 0.35	Somewhat limited Flooding	0.60
297216 Wurtsboro-----	92	Somewhat limited Depth to saturated zone Frost action	0.68 0.50	Very limited Depth to saturated zone Unstable excavation walls	1.00 1.00	Somewhat limited Depth to saturated zone Large stones	0.68 0.61
297217 Wurtsboro-----	88	Somewhat limited Depth to saturated zone Slope Frost action	0.68 0.63 0.50	Very limited Depth to saturated zone Unstable excavation walls Slope	1.00 1.00 0.63	Somewhat limited Depth to saturated zone Slope Large stones	0.68 0.63 0.61
297227 Arnot-----	88	Very limited Depth to hard bedrock Frost action Slope	1.00 0.50 0.04	Very limited Depth to hard bedrock Unstable excavation walls Slope	1.00 0.10 0.04	Very limited Depth to bedrock Droughty Gravel Large stones Slope	1.00 1.00 1.00 0.54 0.04
297228 Arnot-----	85	Very limited Depth to hard bedrock Slope Frost action	1.00 1.00 0.50	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 0.10	Very limited Depth to bedrock Slope Droughty Gravel Large stones	1.00 1.00 1.00 1.00 0.54
297229 Wyoming-----	90	Somewhat limited Large stones	0.26	Very limited Unstable excavation walls Large stones	1.00 0.26	Very limited Large stones Droughty Gravel	1.00 0.57 0.06
297230 Wyoming-----	90	Somewhat limited Slope	0.63	Very limited Unstable excavation walls Slope	1.00 0.63	Very limited Large stones Slope Droughty Gravel	1.00 0.63 0.57 0.06
297231 Wyoming-----	90	Very limited Slope Large stones	1.00 0.53	Very limited Slope Unstable excavation walls Large stones	1.00 1.00 0.53	Very limited Slope Large stones Droughty Gravel	1.00 1.00 0.57 0.06

# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
297236 Suncook-----	91	Very limited Flooding	1.00	Very limited Unstable excavation walls Flooding	1.00 0.60	Somewhat limited Droughty Flooding	0.69 0.60
297237 Mardin-----	85	Somewhat limited Depth to saturated zone Frost action	0.94 0.50	Very limited Depth to saturated zone Unstable excavation walls	1.00 0.10	Somewhat limited Depth to saturated zone Droughty Large stones Gravel	0.94 0.33 0.20 0.09
297238 Mardin-----	85	Somewhat limited Depth to saturated zone Slope Frost action	0.94 0.63 0.50	Very limited Depth to saturated zone Slope Unstable excavation walls	1.00 0.63 0.10	Somewhat limited Depth to saturated zone Slope Droughty Large stones Gravel	0.94 0.63 0.33 0.20 0.09
297239 Mardin-----	85	Somewhat limited Depth to saturated zone Frost action	0.94 0.50	Very limited Depth to saturated zone Unstable excavation walls	1.00 0.10	Somewhat limited Depth to saturated zone Large stones Droughty Gravel	0.94 0.84 0.33 0.01
297240 Mardin-----	85	Somewhat limited Depth to saturated zone Slope Frost action	0.94 0.63 0.50	Very limited Depth to saturated zone Slope Unstable excavation walls	1.00 0.63 0.10	Somewhat limited Depth to saturated zone Large stones Slope Droughty Gravel	0.94 0.84 0.63 0.33 0.01
297241 Unadilla-----	90	Very limited Frost action	1.00	Somewhat limited Unstable excavation walls	0.10	Not limited	
297242 Shohola-----	62	Very limited Depth to saturated zone Frost action	1.00 1.00	Very limited Depth to saturated zone Unstable excavation walls Dense layer	1.00 1.00 0.50	Very limited Depth to saturated zone Large stones Droughty	1.00 1.00 0.08
Edgemere-----	29	Very limited Ponding Depth to saturated zone Frost action	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Unstable excavation walls Dense layer	1.00 1.00 1.00 0.50	Very limited Ponding Depth to saturated zone Large stones	1.00 1.00 1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
297243 Shohola-----	62	Very limited Depth to saturated zone Frost action Slope	1.00 1.00 0.63	Very limited Depth to saturated zone Unstable excavation walls Slope Dense layer	1.00 1.00 0.63 0.50	Very limited Depth to saturated zone Large stones Slope Droughty	1.00 1.00 0.63 0.08
Edgemere-----	29	Very limited Ponding Depth to saturated zone Frost action Slope	1.00 1.00 1.00 0.63	Very limited Ponding Depth to saturated zone Unstable excavation walls Slope Dense layer	1.00 1.00 1.00 0.63 0.50	Very limited Ponding Depth to saturated zone Large stones Slope	1.00 1.00 1.00 0.63
297244 Lordstown-----	40	Somewhat limited Frost action Depth to hard bedrock	0.50 0.46	Very limited Depth to hard bedrock Unstable excavation walls	1.00 1.00	Very limited Large stones Depth to bedrock Droughty	1.00 0.46 0.01
Swartswood-----	35	Somewhat limited Frost action	0.50	Very limited Depth to saturated zone Unstable excavation walls	1.00 1.00	Somewhat limited Large stones Droughty	0.84 0.02
297247 Chenango-----	86	Somewhat limited Frost action	0.50	Very limited Unstable excavation walls	1.00	Somewhat limited Gravel Droughty	0.12 0.07
297248 Chenango-----	85	Somewhat limited Slope Frost action	0.63 0.50	Very limited Unstable excavation walls Slope	1.00 0.63	Somewhat limited Slope Gravel Droughty	0.63 0.12 0.07
297249 Chenango-----	90	Very limited Slope Frost action	1.00 0.50	Very limited Slope Unstable excavation walls	1.00 1.00	Very limited Slope Gravel Droughty	1.00 0.12 0.07
297253 Craigsville-----	50	Very limited Flooding Large stones Frost action	1.00 0.99 0.50	Very limited Unstable excavation walls Large stones Flooding	1.00 0.99 0.60	Somewhat limited Large stones Flooding Droughty	0.99 0.60 0.01
Wyoming-----	40	Not limited		Very limited Unstable excavation walls	1.00	Very limited Large stones Droughty Gravel	1.00 0.57 0.06

# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
297254							
Pits, shale-----	40	Not rated		Not rated		Not rated	
Pits, gravel-----	40	Not rated		Not rated		Not rated	
298049							
Wurtsboro, extremely stony----	90	Somewhat limited		Very limited		Somewhat limited	
		Depth to	0.75	Depth to	1.00	Depth to	0.75
		saturated zone		saturated zone		saturated zone	
		Frost action	0.50	Unstable	1.00		
				excavation walls			
				Dense layer	0.50		
298050							
Wurtsboro, extremely stony----	60	Somewhat limited		Very limited		Somewhat limited	
		Depth to	0.75	Depth to	1.00	Depth to	0.75
		saturated zone		saturated zone		saturated zone	
		Frost action	0.50	Unstable	1.00		
				excavation walls			
				Dense layer	0.50		
Swartswood, extremely stony----	40	Somewhat limited		Very limited		Not limited	
		Frost action	0.50	Unstable	1.00		
				excavation walls			
				Dense layer	0.50		
298051							
Wurtsboro, extremely stony----	60	Somewhat limited		Very limited		Somewhat limited	
		Depth to	0.75	Depth to	1.00	Depth to	0.75
		saturated zone		saturated zone		saturated zone	
		Slope	0.63	Unstable	1.00	Slope	0.63
		Frost action	0.50	excavation walls			
				Slope	0.63		
				Dense layer	0.50		
Swartswood, extremely stony----	40	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.63	Unstable	1.00	Slope	0.63
		Frost action	0.50	excavation walls			
				Slope	0.63		
				Dense layer	0.50		
298075							
Colonie-----	80	Not limited		Very limited		Somewhat limited	
				Unstable	1.00	Droughty	0.47
				excavation walls			
298188							
Lackawanna, extremely stony----	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Dense layer	0.50	Large stones	0.88
				Unstable	0.10		
				excavation walls			

# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
298189 Lackawanna, extremely stony----	85	Somewhat limited Slope Frost action	0.63 0.50	Somewhat limited Slope Dense layer Unstable excavation walls	0.63 0.50 0.10	Somewhat limited Large stones Slope	0.88 0.63
298221 Swartswood, extremely stony----	90	Somewhat limited Frost action	0.50	Very limited Unstable excavation walls Dense layer	1.00 0.50	Not limited	
298222 Swartswood, extremely stony----	90	Somewhat limited Slope Frost action	0.63 0.50	Very limited Unstable excavation walls Slope Dense layer	1.00 0.63 0.50	Somewhat limited Slope	0.63
298223 Swartswood, extremely stony----	85	Very limited Slope Frost action	1.00 0.50	Very limited Slope Unstable excavation walls Dense layer	1.00 1.00 0.50	Very limited Slope	1.00
298255 Delaware, rarely flooded-----	80	Somewhat limited Frost action Flooding	0.50 0.40	Somewhat limited Unstable excavation walls	0.10	Not limited	
298256 Delaware, rarely flooded-----	80	Somewhat limited Frost action Flooding	0.50 0.40	Somewhat limited Unstable excavation walls	0.10	Not limited	
298257 Wallpack-----	85	Somewhat limited Slope Frost action	0.63 0.50	Very limited Unstable excavation walls Slope Dense layer	1.00 0.63 0.50	Somewhat limited Slope	0.63
298258 Wallpack-----	85	Very limited Slope Frost action	1.00 0.50	Very limited Slope Unstable excavation walls Dense layer	1.00 1.00 0.50	Very limited Slope	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
298259 Wallpack, extremely stony-----	85	Somewhat limited Frost action	0.50	Very limited Unstable excavation walls Dense layer	1.00 0.50	Not limited	
298260 Wallpack, extremely stony-----	85	Somewhat limited Slope Frost action	0.63 0.50	Very limited Unstable excavation walls Slope Dense layer	1.00 0.63 0.50	Somewhat limited Slope	0.63
298261 Wallpack-----	85	Somewhat limited Frost action	0.50	Very limited Unstable excavation walls Dense layer	1.00 0.50	Not limited	
298262 Wallpack, extremely stony-----	85	Very limited Slope Frost action	1.00 0.50	Very limited Slope Unstable excavation walls Dense layer	1.00 1.00 0.50	Very limited Slope	1.00
298265 Venango, extremely stony-----	90	Very limited Depth to saturated zone Frost action Low strength	1.00 1.00 1.00	Very limited Depth to saturated zone Unstable excavation walls Dense layer	1.00 1.00 1.00 0.50	Very limited Depth to saturated zone	1.00
298266 Venango, extremely stony-----	85	Very limited Depth to saturated zone Frost action Low strength Slope	1.00 1.00 1.00 0.63	Very limited Depth to saturated zone Unstable excavation walls Slope Dense layer	1.00 1.00 1.00 0.63 0.50	Very limited Depth to saturated zone Slope	1.00 0.63
298409 Swartswood, extremely stony----	90	Somewhat limited Frost action	0.50	Very limited Unstable excavation walls Dense layer	1.00 0.50	Not limited	
298411 Swartswood, extremely stony----	90	Somewhat limited Slope Frost action	0.63 0.50	Very limited Unstable excavation walls Slope Dense layer	1.00 0.63 0.50	Somewhat limited Slope	0.63

# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
298413 Swartswood, extremely stony----	85	Very limited Slope Frost action	1.00 0.50	Very limited Slope Unstable excavation walls Dense layer	1.00 1.00 0.50	Very limited Slope	1.00
318498 Hazen, very stony---	60	Somewhat limited Frost action	0.50	Very limited Unstable excavation walls	1.00	Somewhat limited Droughty	0.01
Hoosic, very stony--	35	Not limited		Very limited Unstable excavation walls	1.00	Somewhat limited Droughty	0.10
318533 Hazen, very stony---	50	Somewhat limited Frost action	0.50	Very limited Unstable excavation walls	1.00	Somewhat limited Droughty	0.01
Hoosic, very stony--	40	Not limited		Very limited Unstable excavation walls	1.00	Somewhat limited Droughty	0.10
319783 Catden-----	85	Very limited Ponding Depth to saturated zone Frost action	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Organic matter content	1.00 1.00 1.00	Not rated	
319784 Fredon, very stony--	50	Very limited Frost action Depth to saturated zone	1.00 0.96	Very limited Depth to saturated zone Unstable excavation walls	1.00 1.00	Somewhat limited Depth to saturated zone	0.96
Halsey, very stony--	40	Very limited Ponding Depth to saturated zone Frost action	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Unstable excavation walls	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
543222 Andover, extremely stony-----	55	Very limited Depth to saturated zone Frost action	1.00 1.00	Very limited Depth to saturated zone Unstable excavation walls	1.00 1.00	Very limited Depth to saturated zone Large stones Droughty	1.00 0.54 0.01
Buchanan, extremely stony-----	40	Somewhat limited Frost action Depth to saturated zone	0.50 0.48	Very limited Depth to saturated zone Unstable excavation walls	1.00 1.00	Very limited Large stones Depth to saturated zone Gravel	1.00 0.48 0.01



# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
543243 Berks-----	65	Very limited Slope Depth to hard bedrock	1.00 0.20	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 0.10	Very limited Slope Droughty Gravel Depth to bedrock Large stones	1.00 0.79 0.46 0.20 0.20
Weikert-----	25	Very limited Depth to hard bedrock Slope Frost action	1.00 1.00 0.50	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 0.10	Very limited Depth to bedrock Slope Droughty Gravel	1.00 1.00 1.00 0.92
543246 Buchanan-----	75	Somewhat limited Frost action Depth to saturated zone	0.50 0.48	Very limited Depth to saturated zone Unstable excavation walls	1.00 1.00	Somewhat limited Gravel Depth to saturated zone	0.54 0.48
543247 Buchanan, extremely stony-----	80	Somewhat limited Frost action Depth to saturated zone	0.50 0.48	Very limited Depth to saturated zone Unstable excavation walls	1.00 1.00	Somewhat limited Gravel Depth to saturated zone	0.54 0.48
543257 Chippewa-----	90	Very limited Depth to saturated zone Frost action	1.00 1.00	Very limited Depth to saturated zone Dense layer Unstable excavation walls	1.00 0.50 0.10	Very limited Depth to saturated zone Droughty	1.00 0.30
543258 Chippewa-----	90	Very limited Depth to saturated zone Frost action	1.00 1.00	Very limited Depth to saturated zone Dense layer Unstable excavation walls	1.00 0.50 0.10	Very limited Depth to saturated zone Droughty	1.00 0.30
543259 Chippewa, extremely stony-----	90	Very limited Depth to saturated zone Frost action	1.00 1.00	Very limited Depth to saturated zone Dense layer Unstable excavation walls	1.00 0.50 0.10	Very limited Depth to saturated zone Large stones Droughty	1.00 0.92 0.65
543271 Delaware-----	90	Somewhat limited Frost action Flooding	0.50 0.40	Very limited Unstable excavation walls	1.00	Not limited	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
543276 Fluvaquents-----	85	Very limited Depth to saturated zone Frost action Flooding	 1.00 1.00 1.00	Very limited Depth to saturated zone Flooding Unstable excavation walls Too clayey	 1.00 0.80 0.10 0.01	Very limited Flooding Depth to saturated zone	 1.00 1.00
543292 Hazleton, extremely stony-----	90	Very limited Slope Frost action Large stones	 1.00 0.50 0.10	Very limited Slope Large stones Unstable excavation walls Depth to hard bedrock	 1.00 0.10 0.10 0.08	Very limited Large stones Slope Gravel	 1.00 1.00 0.01
543293 Hazleton, extremely stony-----	90	Very limited Slope Frost action Large stones	 1.00 0.50 0.10	Very limited Slope Large stones Unstable excavation walls	 1.00 0.10 0.10	Very limited Slope Large stones Gravel	 1.00 1.00 0.01
543299 Laidig, extremely stony-----	90	Somewhat limited Frost action	 0.50	Very limited Unstable excavation walls Depth to saturated zone	 1.00 0.90	Very limited Large stones Gravel	 1.00 0.16
543300 Laidig, extremely stony-----	90	Very limited Slope Frost action	 1.00 0.50	Very limited Unstable excavation walls Slope Depth to saturated zone	 1.00 1.00 0.90	Very limited Large stones Slope Gravel	 1.00 1.00 0.16
543304 Laidig-----	50	Very limited Slope Frost action	 1.00 0.50	Very limited Slope Unstable excavation walls Depth to saturated zone	 1.00 1.00 0.90	Very limited Slope Large stones Gravel	 1.00 1.00 0.16
Rubble land-----	40	Very limited Large stones Slope	 1.00 1.00	Very limited Large stones Slope Dense layer	 1.00 1.00 0.50	Not rated	
543318 Rubble land-----	75	Very limited Large stones Slope	 1.00 1.00	Very limited Large stones Slope Dense layer	 1.00 1.00 0.50	Very limited Large stones Slope Droughty	 1.00 1.00 1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
543327 Swartswood-----	90	Somewhat limited Frost action	0.50	Very limited Unstable excavation walls Depth to saturated zone	1.00 0.98	Somewhat limited Gravel Large stones Droughty	0.24 0.08 0.01
543328 Swartswood-----	90	Somewhat limited Slope Frost action	0.63 0.50	Very limited Unstable excavation walls Depth to saturated zone Slope	1.00 0.98 0.63	Somewhat limited Slope Gravel Large stones Droughty	0.63 0.24 0.08 0.01
543330 Swartswood, extremely stony----	50	Somewhat limited Frost action	0.50	Very limited Unstable excavation walls Depth to saturated zone	1.00 0.98	Somewhat limited Large stones Gravel Droughty	0.54 0.01 0.01
Wurtsboro, extremely stony----	30	Somewhat limited Frost action Depth to saturated zone	0.50 0.19	Very limited Depth to saturated zone Unstable excavation walls	1.00 1.00	Somewhat limited Large stones Depth to saturated zone	0.92 0.19
543331 Swartswood, extremely stony----	50	Very limited Slope Frost action	1.00 0.50	Very limited Unstable excavation walls Slope Depth to saturated zone	1.00 1.00 0.98	Very limited Slope Large stones Gravel Droughty	1.00 0.54 0.01 0.01
Wurtsboro, extremely stony----	30	Very limited Slope Frost action Depth to saturated zone	1.00 0.50 0.19	Very limited Depth to saturated zone Unstable excavation walls Slope	1.00 1.00 1.00	Very limited Slope Large stones Depth to saturated zone	1.00 0.92 0.19
543359 Volusia-----	85	Very limited Depth to saturated zone Frost action	1.00 1.00	Very limited Depth to saturated zone Dense layer Unstable excavation walls	1.00 0.50 0.10	Very limited Depth to saturated zone Droughty Gravel	1.00 0.92 0.01

# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
543360 Volusia, extremely stony-----	85	Very limited Depth to saturated zone Frost action	1.00 1.00	Very limited Depth to saturated zone Dense layer Unstable excavation walls	1.00 0.50 0.10	Very limited Depth to saturated zone Large stones Droughty	1.00 1.00 0.85
543374 Wurtsboro-----	90	Somewhat limited Frost action Depth to saturated zone	0.50 0.19	Very limited Depth to saturated zone Unstable excavation walls	1.00 1.00	Somewhat limited Depth to saturated zone Gravel	0.19 0.04
543375 Wurtsboro-----	90	Somewhat limited Slope Frost action Depth to saturated zone	0.63 0.50 0.19	Very limited Depth to saturated zone Unstable excavation walls Slope	1.00 1.00 0.63	Somewhat limited Slope Depth to saturated zone Gravel	0.63 0.19 0.04
612280 Scio-----	80	Very limited Frost action Depth to saturated zone	1.00 0.43	Very limited Depth to saturated zone Unstable excavation walls	1.00 0.10	Somewhat limited Depth to saturated zone	0.43
612666 Colonie-----	80	Not limited		Very limited Unstable excavation walls	1.00	Somewhat limited Droughty	0.47
612668 Hoosic, very stony--	60	Somewhat limited Slope	0.63	Very limited Unstable excavation walls Slope	1.00 0.63	Somewhat limited Slope Droughty	0.63 0.10
Hazen, very stony---	30	Somewhat limited Slope Frost action	0.63 0.50	Very limited Unstable excavation walls Slope	1.00 0.63	Somewhat limited Slope Droughty	0.63 0.01
612724 Lordstown, very rocky-----	50	Very limited Slope Frost action Depth to hard bedrock	1.00 0.50 0.06	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00	Very limited Slope Depth to bedrock	1.00 0.06
Wallpack, very rocky	40	Very limited Slope Frost action	1.00 0.50	Very limited Slope Unstable excavation walls Dense layer	1.00 1.00 0.50	Very limited Slope	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
612732 Atherton, very poorly drained-----	60	Very limited Ponding Depth to saturated zone Frost action Low strength	 1.00 1.00  1.00 1.00	Very limited Ponding Depth to saturated zone Unstable excavation walls	 1.00 1.00  0.10	Very limited Ponding Depth to saturated zone	 1.00 1.00
Atherton, poorly drained-----	30	Very limited Depth to saturated zone Frost action Low strength	 1.00 1.00 1.00	Very limited Depth to saturated zone Unstable excavation walls	 1.00 0.10	Very limited Depth to saturated zone	 1.00
612738 Fluvaquents, occasionally flooded-----	90	Very limited Depth to saturated zone Frost action Flooding	 1.00 1.00 1.00	Very limited Depth to saturated zone Flooding Unstable excavation walls	 1.00 0.60 0.10	Very limited Depth to saturated zone Flooding	 1.00 0.60
612753 Wallpack, aeolian mantle, very stony-	85	Somewhat limited Slope Frost action	 0.63 0.50	Very limited Unstable excavation walls Slope	 1.00 0.63	Somewhat limited Slope	 0.63
612756 Wallpack, aeolian mantle, very stony-	85	Somewhat limited Frost action	 0.50	Very limited Unstable excavation walls	 1.00	Not limited	
612757 Wallpack, aeolian mantle, very stony-	85	Very limited Slope Frost action	 1.00 0.50	Very limited Slope Unstable excavation walls	 1.00 1.00	Very limited Slope	 1.00
612767 Wellsboro, extremely stony----	85	Somewhat limited Slope Frost action Depth to saturated zone	 0.63 0.50 0.19	Very limited Depth to saturated zone Slope Dense layer Unstable excavation walls	 1.00  0.63 0.50 0.10	Somewhat limited Slope Depth to saturated zone Large stones	 0.63 0.19 0.16

# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
612768 Wellsboro, extremely stony----	85	Somewhat limited Frost action Depth to saturated zone	0.50 0.19	Very limited Depth to saturated zone Dense layer Unstable excavation walls	1.00 0.50 0.10	Somewhat limited Depth to saturated zone Large stones	0.19 0.16
613393 Alden, extremely stony-----	90	Very limited Ponding Depth to saturated zone Frost action Low strength	1.00 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Unstable excavation walls	1.00 1.00 0.10	Very limited Ponding Depth to saturated zone	1.00 1.00
613447 Unadilla-----	85	Very limited Frost action	1.00	Somewhat limited Unstable excavation walls	0.10	Not limited	
613448 Unadilla-----	85	Very limited Frost action	1.00	Somewhat limited Unstable excavation walls	0.10	Not limited	
614075 Wurtsboro, extremely stony----	80	Very limited Slope Depth to saturated zone Frost action	1.00 0.75 0.50	Very limited Slope Depth to saturated zone Unstable excavation walls Dense layer	1.00 1.00 1.00 0.50	Very limited Slope Depth to saturated zone	1.00 0.75
Swartswood, extremely stony----	20	Very limited Slope Frost action	1.00 0.50	Very limited Slope Unstable excavation walls Dense layer	1.00 1.00 0.50	Very limited Slope	1.00
620179 Arnot, very rocky---	55	Very limited Depth to hard bedrock Frost action	1.00 0.50	Very limited Depth to hard bedrock Unstable excavation walls	1.00 0.50	Very limited Depth to bedrock Droughty	1.00 0.99
Lordstown, very rocky-----	40	Somewhat limited Frost action Depth to hard bedrock	0.50 0.06	Very limited Depth to hard bedrock Unstable excavation walls	1.00 1.00	Somewhat limited Depth to bedrock	0.06

# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
620180							
Arnot-----	45	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Unstable excavation walls	0.50	Droughty	0.99
Lordstown-----	40	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Depth to bedrock	0.06
		Depth to hard bedrock	0.06	Unstable excavation walls	1.00		
Rock outcrop-----	15	Not rated		Not rated		Not rated	
620181							
Arnot-----	60	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Unstable excavation walls	0.50	Droughty	0.99
Lordstown-----	25	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Depth to bedrock	0.06
		Depth to hard bedrock	0.06	Unstable excavation walls	1.00		
Rock outcrop-----	15	Not rated		Not rated		Not rated	
623089							
Chippewa, extremely stony-----	80	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Dense layer	0.50	Droughty	0.49
		Low strength	1.00	Unstable excavation walls	0.10		
623109							
Farmington-----	50	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Frost action	1.00	Unstable excavation walls	0.50	Droughty	0.97
Rock outcrop-----	40	Not rated		Not rated		Not rated	
624811							
Galway, very rocky--	80	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.90	Slope	1.00	Depth to bedrock	0.90
		Frost action	0.50	Unstable excavation walls	1.00	Droughty	0.01

# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
624813 Lackawanna, extremely stony----	85	Somewhat limited Frost action	0.50	Somewhat limited Dense layer Unstable excavation walls	0.50 0.10	Somewhat limited Large stones	0.88
624816 Lordstown, very rocky-----	50	Somewhat limited Slope Frost action Depth to hard bedrock	0.63 0.50 0.06	Very limited Depth to hard bedrock Unstable excavation walls Slope	1.00 1.00 0.63	Somewhat limited Slope Depth to bedrock	0.63 0.06
Wallpack, very rocky	35	Somewhat limited Slope Frost action	0.63 0.50	Very limited Unstable excavation walls Slope Dense layer	1.00 0.63 0.50	Somewhat limited Slope	0.63
624822 Lordstown-----	50	Very limited Slope Frost action Depth to hard bedrock	1.00 0.50 0.06	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00	Very limited Slope Depth to bedrock	1.00 0.06
Wallpack-----	35	Very limited Slope Frost action	1.00 0.50	Very limited Slope Unstable excavation walls Dense layer	1.00 1.00 0.50	Very limited Slope	1.00
624823 Lordstown-----	50	Somewhat limited Slope Frost action Depth to hard bedrock	0.63 0.50 0.06	Very limited Depth to hard bedrock Unstable excavation walls Slope	1.00 1.00 0.63	Somewhat limited Slope Depth to bedrock	0.63 0.06
Wallpack-----	35	Somewhat limited Slope Frost action	0.63 0.50	Very limited Unstable excavation walls Slope Dense layer	1.00 0.63 0.50	Somewhat limited Slope	0.63
624824 Lordstown-----	50	Somewhat limited Frost action Depth to hard bedrock	0.50 0.06	Very limited Depth to hard bedrock Unstable excavation walls	1.00 1.00	Somewhat limited Depth to bedrock	0.06
Wallpack-----	35	Somewhat limited Frost action	0.50	Very limited Unstable excavation walls Dense layer	1.00 0.50	Not limited	



# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
624826 Manlius, very rocky--	60	Very limited Slope Depth to hard bedrock Frost action Large stones	 1.00 0.71  0.50 0.42	Very limited Depth to hard bedrock Slope Large stones Unstable excavation walls	 1.00  1.00 0.42 0.10	Very limited Slope Large stones Depth to bedrock Droughty	 1.00 0.99 0.71 0.70
Nassau, very rocky--	25	Very limited Depth to hard bedrock Slope Frost action Large stones	 1.00  1.00 0.50 0.39	Very limited Depth to hard bedrock Slope Unstable excavation walls Large stones	 1.00  1.00 0.50 0.39	Very limited Depth to bedrock Slope Droughty Large stones	 1.00 1.00 1.00 0.92
624827 Nassau, very rocky--	55	Very limited Depth to hard bedrock Frost action Large stones	 1.00  0.50 0.15	Very limited Depth to hard bedrock Large stones Unstable excavation walls	 1.00  0.15 0.10	Very limited Depth to bedrock Droughty Large stones	 1.00 1.00 0.92
Manlius, very rocky--	44	Somewhat limited Depth to hard bedrock Frost action Large stones	 0.54  0.50 0.33	Very limited Depth to hard bedrock Large stones Unstable excavation walls	 1.00  0.33 0.10	Somewhat limited Large stones Droughty Depth to bedrock Gravel	 0.99 0.56 0.54 0.02
624828 Nassau, very rocky--	55	Very limited Depth to hard bedrock Slope Frost action Large stones	 1.00  0.63 0.50 0.15	Very limited Depth to hard bedrock Slope Large stones Unstable excavation walls	 1.00  0.63 0.15 0.10	Very limited Depth to bedrock Droughty Large stones Slope	 1.00 1.00 0.92 0.63
Manlius, very rocky--	44	Somewhat limited Slope Depth to hard bedrock Frost action Large stones	 0.63 0.54  0.50 0.33	Very limited Depth to hard bedrock Slope Large stones Unstable excavation walls	 1.00  0.63 0.33 0.10	Somewhat limited Large stones Slope Droughty Depth to bedrock Gravel	 0.99 0.63 0.56 0.54 0.02
624829 Nassau, very rocky--	55	Very limited Depth to hard bedrock Slope Frost action Large stones	 1.00  1.00 0.50 0.15	Very limited Depth to hard bedrock Slope Large stones Unstable excavation walls	 1.00  1.00 0.15 0.10	Very limited Depth to bedrock Slope Droughty Large stones	 1.00 1.00 1.00 0.92

# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
624829 Manlius, very rocky-	44	Very limited Slope Depth to hard bedrock Frost action Large stones	 1.00 0.54  0.50 0.33	Very limited Depth to hard bedrock Slope Large stones Unstable excavation walls	 1.00  1.00 0.33 0.10	Very limited Slope Large stones Droughty Depth to bedrock Gravel	 1.00 0.99 0.56 0.54 0.02
624832 Nassau-----	50	Very limited Depth to hard bedrock Slope Frost action Large stones	 1.00  1.00 0.50 0.39	Very limited Depth to hard bedrock Slope Unstable excavation walls Large stones	 1.00  1.00 0.50 0.39	Very limited Depth to bedrock Slope Droughty Large stones	 1.00 1.00 1.00 0.92
Rock outcrop-----	45	Not rated		Not rated		Not rated	
624841 Oquaga-----	60	Very limited Slope Depth to hard bedrock Frost action Large stones	 1.00 0.84  0.50 0.01	Very limited Depth to hard bedrock Slope Unstable excavation walls Large stones	 1.00  1.00 0.10 0.01	Very limited Slope Droughty Depth to bedrock Large stones	 1.00 0.84 0.84 0.20
Rock outcrop-----	25	Not rated		Not rated		Not rated	
624845 Rock outcrop-----	45	Not rated		Not rated		Not rated	
Farmington-----	35	Very limited Depth to hard bedrock Slope Frost action	 1.00  1.00 1.00	Very limited Depth to hard bedrock Slope Unstable excavation walls	 1.00  1.00 0.50	Very limited Depth to bedrock Slope Droughty	 1.00 1.00 0.97
Galway-----	20	Very limited Slope Depth to hard bedrock Frost action	 1.00 0.90  0.50	Very limited Depth to hard bedrock Slope Unstable excavation walls	 1.00  1.00 1.00	Very limited Slope Depth to bedrock Droughty	 1.00 0.90 0.01
624846 Rock outcrop-----	40	Not rated		Not rated		Not rated	
Arnot-----	30	Very limited Depth to hard bedrock Slope Frost action	 1.00  1.00 0.50	Very limited Depth to hard bedrock Slope Unstable excavation walls	 1.00  1.00 0.50	Very limited Depth to bedrock Slope Droughty	 1.00 1.00 0.99
Rubble land-----	20	Very limited Large stones Slope	 1.00 1.00	Very limited Large stones Slope	 1.00 1.00	Not rated	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
626816 Udifluvents, occasionally flooded-----	90	Very limited Flooding	1.00	Very limited Unstable excavation walls Depth to saturated zone Flooding	1.00 0.87 0.60	Somewhat limited Droughty Flooding	0.96 0.60
635458 Oquaga, very rocky--	55	Somewhat limited Depth to hard bedrock Slope Frost action Large stones	0.84 0.63 0.50 0.01	Very limited Depth to hard bedrock Slope Unstable excavation walls Large stones	1.00 0.63 0.63 0.10 0.01	Somewhat limited Droughty Depth to bedrock Slope Large stones	0.84 0.84 0.63 0.20
Lackawanna, very rocky-----	30	Somewhat limited Slope Frost action	0.63 0.50	Somewhat limited Slope Dense layer Unstable excavation walls	0.63 0.50 0.10	Somewhat limited Large stones Slope	0.88 0.63
635459 Oquaga, very rocky--	50	Very limited Slope Depth to hard bedrock Frost action Large stones	1.00 0.84 0.50 0.01	Very limited Depth to hard bedrock Slope Unstable excavation walls Large stones	1.00 1.00 1.00 0.10 0.01	Very limited Slope Droughty Depth to bedrock Large stones	1.00 0.84 0.84 0.20
Lackawanna, very rocky-----	35	Very limited Slope Frost action	1.00 0.50	Very limited Slope Dense layer Unstable excavation walls	1.00 0.50 0.10	Very limited Slope Large stones	1.00 0.88
740953 Delaware, rarely flooded-----	80	Somewhat limited Frost action Flooding	0.50 0.40	Somewhat limited Unstable excavation walls	0.10	Not limited	
740968 Nassau, very rocky--	55	Very limited Depth to hard bedrock Slope Frost action Large stones	1.00 0.63 0.50 0.15	Very limited Depth to hard bedrock Slope Large stones Unstable excavation walls	1.00 0.63 0.15 0.10	Very limited Depth to bedrock Droughty Large stones Slope	1.00 1.00 0.92 0.63

# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
740968 Manlius, very rocky-	44	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.63	Depth to hard	1.00	Large stones	0.99
		Depth to hard	0.54	bedrock		Slope	0.63
		bedrock		Slope	0.63	Droughty	0.56
		Frost action	0.50	Large stones	0.33	Depth to bedrock	0.54
		Large stones	0.33	Unstable	0.10	Gravel	0.02
				excavation walls			
740969 Nassau, very rocky--	55	Very limited		Very limited		Very limited	
		Depth to hard	1.00	Depth to hard	1.00	Depth to bedrock	1.00
		bedrock		bedrock		Slope	1.00
		Slope	1.00	Slope	1.00	Droughty	1.00
		Frost action	0.50	Large stones	0.15	Large stones	0.92
		Large stones	0.15	Unstable	0.10		
				excavation walls			
Manlius, very rocky-	44	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard	1.00	Slope	1.00
		Depth to hard	0.54	bedrock		Large stones	0.99
		bedrock		Slope	1.00	Droughty	0.56
		Frost action	0.50	Large stones	0.33	Depth to bedrock	0.54
		Large stones	0.33	Unstable	0.10	Gravel	0.02
				excavation walls			
740971 Oquaga, very rocky--	55	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard	0.84	Depth to hard	1.00	Droughty	0.84
		bedrock		bedrock		Depth to bedrock	0.84
		Slope	0.63	Slope	0.63	Slope	0.63
		Frost action	0.50	Unstable	0.10	Large stones	0.20
		Large stones	0.01	excavation walls			
				Large stones	0.01		
Lackawanna, very rocky-----	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.63	Slope	0.63	Large stones	0.88
		Frost action	0.50	Dense layer	0.50	Slope	0.63
				Unstable	0.10		
				excavation walls			
740972 Oquaga, very rocky--	50	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard	1.00	Slope	1.00
		Depth to hard	0.84	bedrock		Droughty	0.84
		bedrock		Slope	1.00	Depth to bedrock	0.84
		Frost action	0.50	Unstable	0.10	Large stones	0.20
		Large stones	0.01	excavation walls			
				Large stones	0.01		
Lackawanna, very rocky-----	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Dense layer	0.50	Large stones	0.88
				Unstable	0.10		
				excavation walls			

# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
740974 Oquaga-----	60	Very limited Slope Depth to hard bedrock Frost action Large stones	1.00 0.84 0.50 0.01	Very limited Depth to hard bedrock Slope Unstable excavation walls Large stones	1.00 1.00 0.10 0.01	Very limited Slope Droughty Depth to bedrock Large stones	1.00 0.84 0.84 0.20
Rock outcrop-----	25	Not rated		Not rated		Not rated	
740975 Rock outcrop-----	40	Not rated		Not rated		Not rated	
Arnot-----	30	Very limited Depth to hard bedrock Slope Frost action	1.00 1.00 0.50	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 0.50	Very limited Depth to bedrock Slope Droughty	1.00 1.00 0.99
Rubble land-----	20	Very limited Large stones Slope	1.00 1.00	Very limited Large stones Slope	1.00 1.00	Not rated	
740987 Scio-----	80	Very limited Frost action Depth to saturated zone	1.00 0.43	Very limited Depth to saturated zone Unstable excavation walls	1.00 0.10	Somewhat limited Depth to saturated zone	0.43
740988 Udifluvents, occasionally flooded-----	90	Very limited Flooding	1.00	Very limited Unstable excavation walls Depth to saturated zone Flooding	1.00 0.87 0.60	Somewhat limited Droughty Flooding	0.96 0.60
740991 Unadilla-----	85	Very limited Frost action	1.00	Somewhat limited Unstable excavation walls	0.10	Not limited	
740992 Unadilla-----	85	Very limited Frost action	1.00	Somewhat limited Unstable excavation walls	0.10	Not limited	
740995 Wellsboro, extremely stony----	85	Somewhat limited Frost action Depth to saturated zone	0.50 0.19	Very limited Depth to saturated zone Dense layer Unstable excavation walls	1.00 0.50 0.10	Somewhat limited Depth to saturated zone Large stones	0.19 0.16

# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
740996 Wellsboro, extremely stony----	85	Somewhat limited Slope Frost action Depth to saturated zone	0.63 0.50 0.19	Very limited Depth to saturated zone Slope Dense layer Unstable excavation walls	1.00 0.63 0.50 0.10	Somewhat limited Slope Depth to saturated zone Large stones	0.63 0.19 0.16
741149 Lackawanna, extremely stony----	85	Somewhat limited Slope Frost action	0.63 0.50	Somewhat limited Slope Dense layer Unstable excavation walls	0.63 0.50 0.10	Somewhat limited Large stones Slope	0.88 0.63
741150 Lackawanna, extremely stony----	85	Very limited Slope Frost action	1.00 0.50	Very limited Slope Dense layer Unstable excavation walls	1.00 0.50 0.10	Very limited Slope Large stones	1.00 0.88
801114 Oquaga-----	75	Somewhat limited Depth to hard bedrock Frost action Large stones	0.84 0.50 0.01	Very limited Depth to hard bedrock Unstable excavation walls Large stones	1.00 0.10 0.01	Somewhat limited Droughty Depth to bedrock Large stones	0.84 0.84 0.20
Rock outcrop-----	15	Not rated		Not rated		Not rated	
810906 Oquaga-----	75	Somewhat limited Depth to hard bedrock Frost action Large stones	0.84 0.50 0.01	Very limited Depth to hard bedrock Unstable excavation walls Large stones	1.00 0.10 0.01	Somewhat limited Droughty Depth to bedrock Large stones	0.84 0.84 0.20
Rock outcrop-----	15	Not rated		Not rated		Not rated	
1147464 Alden, extremely stony-----	90	Very limited Ponding Depth to saturated zone Frost action Low strength	1.00 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Unstable excavation walls	1.00 1.00 0.10	Very limited Ponding Depth to saturated zone	1.00 1.00
1147467 Arnot, very rocky---	55	Very limited Depth to hard bedrock Frost action	1.00 0.50	Very limited Depth to hard bedrock Unstable excavation walls	1.00 0.50	Very limited Depth to bedrock Droughty	1.00 0.99

# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1147467 Lordstown, very rocky-----	40	Somewhat limited Frost action Depth to hard bedrock	0.50 0.06	Very limited Depth to hard bedrock Unstable excavation walls	1.00 1.00	Somewhat limited Depth to bedrock	0.06
1147468 Arnot-----	45	Very limited Depth to hard bedrock Slope Frost action	1.00 1.00 0.50	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 0.50	Very limited Depth to bedrock Slope Droughty	1.00 1.00 0.99
Lordstown-----	40	Very limited Slope Frost action Depth to hard bedrock	1.00 0.50 0.06	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00	Very limited Slope Depth to bedrock	1.00 0.06
Rock outcrop-----	15	Not rated		Not rated		Not rated	
1147469 Arnot-----	60	Very limited Depth to hard bedrock Slope Frost action	1.00 1.00 0.50	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 0.50	Very limited Depth to bedrock Slope Droughty	1.00 1.00 0.99
Lordstown-----	25	Very limited Slope Frost action Depth to hard bedrock	1.00 0.50 0.06	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 1.00	Very limited Slope Depth to bedrock	1.00 0.06
Rock outcrop-----	15	Not rated		Not rated		Not rated	
1147470 Atherton, very poorly drained----	60	Very limited Ponding Depth to saturated zone Frost action Low strength	1.00 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Unstable excavation walls	1.00 1.00 0.10	Very limited Ponding Depth to saturated zone	1.00 1.00
Atherton, poorly drained-----	30	Very limited Depth to saturated zone Frost action Low strength	1.00 1.00 1.00	Very limited Depth to saturated zone Unstable excavation walls	1.00 0.10	Very limited Depth to saturated zone	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1147471 Catden-----	85	Very limited Ponding Depth to saturated zone Frost action	 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Organic matter content	 1.00 1.00 1.00	Not rated	
1147474 Chippewa, extremely stony-----	80	Very limited Ponding Depth to saturated zone Frost action Low strength	 1.00 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Dense layer Unstable excavation walls	 1.00 1.00 0.50 0.10	Very limited Ponding Depth to saturated zone Droughty	 1.00 1.00 0.49
1147474 Colonie-----	80	Not limited		Very limited Unstable excavation walls	1.00	Somewhat limited Droughty	0.47
1147478 Delaware, rarely flooded-----	80	Somewhat limited Frost action Flooding	0.50 0.40	Somewhat limited Unstable excavation walls	0.10	Not limited	
1147482 Fredon, very stony--	50	Very limited Frost action Depth to saturated zone	1.00 0.96	Very limited Depth to saturated zone Unstable excavation walls	1.00 1.00	Somewhat limited Depth to saturated zone	0.96
Halsey, very stony--	40	Very limited Ponding Depth to saturated zone Frost action	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Unstable excavation walls	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
1147484 Hazen, very stony---	60	Somewhat limited Frost action	0.50	Very limited Unstable excavation walls	1.00	Somewhat limited Droughty	0.01
Hoosic, very stony--	35	Not limited		Very limited Unstable excavation walls	1.00	Somewhat limited Droughty	0.10
1147490 Hoosic, very stony--	60	Somewhat limited Slope	0.63	Very limited Unstable excavation walls Slope	1.00 0.63	Somewhat limited Slope Droughty	0.63 0.10
Hazen, very stony---	30	Somewhat limited Slope Frost action	0.63 0.50	Very limited Unstable excavation walls Slope	1.00 0.63	Somewhat limited Slope Droughty	0.63 0.01



# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1147491 Hoosic, very stony--	50	Very limited Slope	1.00	Very limited Slope Unstable excavation walls	1.00 1.00	Very limited Slope Droughty	1.00 0.10
Otisville, very stony-----	40	Very limited Slope	1.00	Very limited Slope Unstable excavation walls	1.00 1.00	Very limited Slope Droughty	1.00 0.95
1147492 Lackawanna, extremely stony----	85	Somewhat limited Frost action	0.50	Somewhat limited Dense layer Unstable excavation walls	0.50 0.10	Somewhat limited Large stones	0.88
1147500 Wurtsboro, extremely stony----	90	Somewhat limited Depth to saturated zone Frost action	0.75 0.50	Very limited Depth to saturated zone Unstable excavation walls Dense layer	1.00 1.00 0.50	Somewhat limited Depth to saturated zone	0.75
1147501 Wurtsboro, extremely stony----	60	Somewhat limited Depth to saturated zone Frost action	0.75 0.50	Very limited Depth to saturated zone Unstable excavation walls Dense layer	1.00 1.00 0.50	Somewhat limited Depth to saturated zone	0.75
Swartswood, extremely stony----	40	Somewhat limited Frost action	0.50	Very limited Unstable excavation walls Dense layer	1.00 0.50	Not limited	
1147502 Wurtsboro, extremely stony----	60	Somewhat limited Depth to saturated zone Slope Frost action	0.75 0.63 0.50	Very limited Depth to saturated zone Unstable excavation walls Slope Dense layer	1.00 1.00 0.63 0.50	Somewhat limited Depth to saturated zone Slope	0.75 0.63
Swartswood, extremely stony----	40	Somewhat limited Slope Frost action	0.63 0.50	Very limited Unstable excavation walls Slope Dense layer	1.00 0.63 0.50	Somewhat limited Slope	0.63

# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1147527 Udorthents-----	60	Not limited		Very limited Unstable excavation walls	1.00	Somewhat limited Droughty	0.01
Urban land-----	40	Not rated		Not rated		Not rated	
1147532 Udorthents-----	100	Not limited		Very limited Unstable excavation walls	1.00	Somewhat limited Droughty	0.01
1147533 Wurtsboro, extremely stony----	80	Very limited Slope Depth to saturated zone Frost action	1.00 0.75 0.50	Very limited Slope Depth to saturated zone Unstable excavation walls Dense layer	1.00 1.00 1.00 0.50	Very limited Slope Depth to saturated zone	1.00 0.75
Swartswood, extremely stony----	20	Very limited Slope Frost action	1.00 0.50	Very limited Slope Unstable excavation walls Dense layer	1.00 1.00 0.50	Very limited Slope	1.00
1948749 Arnot-----	90	Very limited Depth to hard bedrock Frost action	1.00 0.50	Very limited Depth to hard bedrock Unstable excavation walls	1.00 1.00 0.10	Very limited Depth to bedrock Droughty Gravel Large stones	1.00 1.00 0.08 0.03
1948750 Arnot-----	90	Very limited Depth to hard bedrock Slope Frost action	1.00 0.63 0.50	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 0.63 0.10	Very limited Depth to bedrock Droughty Slope Gravel Large stones	1.00 1.00 0.63 0.08 0.03
1948751 Arnot-----	90	Very limited Depth to hard bedrock Slope Frost action	1.00 1.00 0.50	Very limited Depth to hard bedrock Slope Unstable excavation walls	1.00 1.00 0.10	Very limited Depth to bedrock Slope Droughty Gravel Large stones	1.00 1.00 1.00 0.08 0.03
1948774 Conotton-----	90	Somewhat limited Frost action	0.50	Very limited Unstable excavation walls	1.00	Somewhat limited Gravel Droughty	0.41 0.11
1948774 Conotton-----	95	Somewhat limited Slope Frost action	0.63 0.50	Very limited Unstable excavation walls Slope	1.00 0.63	Somewhat limited Slope Gravel Droughty	0.63 0.41 0.11

# Soil Survey of Delaware Water Gap National Recreation Area

Table 9.--Roads and Streets, Shallow Excavations, and Landscaping--Continued

Map unit symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1948776 Conotton-----	95	Very limited Slope Frost action	1.00 0.50	Very limited Slope Unstable excavation walls	1.00 1.00	Very limited Slope Gravel Droughty	1.00 0.41 0.11
1948777 Conotton-----	95	Very limited Slope Frost action	1.00 0.50	Very limited Slope Unstable excavation walls	1.00 1.00	Very limited Slope Gravel Droughty	1.00 0.41 0.11
1948797 Manlius-----	90	Somewhat limited Frost action Depth to hard bedrock	0.50 0.29	Very limited Depth to hard bedrock Dense layer Unstable excavation walls	1.00 0.50 0.10	Somewhat limited Large stones Droughty Depth to bedrock Gravel	0.32 0.31 0.29 0.15
1948802 Manlius-----	90	Somewhat limited Slope Frost action Depth to hard bedrock	0.63 0.50 0.29	Very limited Depth to hard bedrock Slope Dense layer Unstable excavation walls	1.00 0.63 0.50 0.10	Somewhat limited Slope Large stones Droughty Depth to bedrock Gravel	0.63 0.32 0.31 0.29 0.15
1948818 Manlius-----	90	Very limited Slope Frost action Depth to hard bedrock	1.00 0.50 0.29	Very limited Depth to hard bedrock Slope Dense layer Unstable excavation walls	1.00 1.00 0.50 0.10	Very limited Slope Large stones Droughty Depth to bedrock Gravel	1.00 0.32 0.31 0.29 0.15
1948832 Penargyl-----	90	Somewhat limited Frost action	0.50	Somewhat limited Unstable excavation walls	0.10	Somewhat limited Gravel	0.01
1948846 Phelps-----	90	Very limited Frost action Depth to saturated zone	1.00 0.43	Very limited Depth to saturated zone Unstable excavation walls	1.00 1.00	Somewhat limited Depth to saturated zone Large stones Gravel	0.43 0.08 0.01
1948854 Udorthents, loamy---	95	Somewhat limited Frost action Depth to saturated zone	0.50 0.48	Very limited Depth to saturated zone Unstable excavation walls	1.00 1.00	Somewhat limited Depth to saturated zone	0.48
1948989 Urban land-----	65	Not rated		Not rated		Not rated	
Delaware-----	25	Somewhat limited Frost action Flooding	0.50 0.40	Very limited Unstable excavation walls	1.00	Not limited	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal

[Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
290836 Hoosic, very stony--	50	Very limited Filtering capacity Slope Seepage, bottom layer	1.00 1.00 1.00	Very limited Slope Seepage	1.00 1.00
Otisville, very stony-----	40	Very limited Slope Seepage, bottom layer Filtering capacity	1.00 1.00 1.00	Very limited Slope Seepage	1.00 1.00
296265 Alden-----	100	Very limited Ponding Depth to saturated zone Slow water movement	1.00 1.00 1.00	Very limited Ponding Organic matter content Depth to saturated zone	1.00 1.00 1.00
296269 Fluvents, (alluvial land)-----	70	Very limited Flooding Depth to saturated zone Slow water movement	1.00 1.00 0.46	Very limited Flooding Depth to saturated zone Seepage	1.00 1.00 1.00
296271 Alvira-----	55	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Very limited Depth to saturated zone Slope Seepage	1.00 0.92 0.53
Watson-----	35	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Very limited Depth to saturated zone Slope Seepage	1.00 0.92 0.53
296272 Bath-----	85	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Somewhat limited Slope Depth to saturated zone Seepage	0.92 0.68 0.53

# Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
296273 Bath-----	85	Very limited Depth to saturated zone Slow water movement Slope	1.00 1.00 0.63	Very limited Slope Depth to saturated zone Seepage	1.00 0.68 0.53
296274 Bath-----	85	Very limited Depth to saturated zone Slow water movement Slope	1.00 1.00 1.00	Very limited Slope Depth to saturated zone Seepage	1.00 0.68 0.53
296275 Bath-----	90	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Somewhat limited Slope Depth to saturated zone Seepage	0.92 0.68 0.53
296276 Bath-----	90	Very limited Depth to saturated zone Slow water movement Slope	1.00 1.00 1.00	Very limited Slope Depth to saturated zone Seepage	1.00 0.68 0.53
296277 Benson-----	55	Very limited Depth to bedrock Large stones	1.00 0.02	Very limited Depth to hard bedrock Seepage Large stones Slope	1.00 0.53 0.48 0.32
296278 Benson-----	60	Very limited Depth to bedrock Slope Large stones	1.00 1.00 0.02	Very limited Depth to hard bedrock Slope Seepage Large stones	1.00 1.00 0.53 0.48
Rock outcrop-----	20	Not rated		Not rated	
296279 Benson-----	60	Very limited Depth to bedrock Slope Large stones	1.00 1.00 0.02	Very limited Depth to hard bedrock Slope Seepage Large stones	1.00 1.00 0.53 0.48
Rock outcrop-----	25	Not rated		Not rated	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
296280 Braceville-----	90	Very limited Depth to saturated zone Slow water movement Seepage, bottom layer	1.00 1.00 1.00	Very limited Seepage Depth to saturated zone	1.00 0.44
296281 Braceville-----	90	Very limited Depth to saturated zone Slow water movement Seepage, bottom layer	1.00 1.00 1.00	Very limited Seepage Slope Depth to saturated zone	1.00 0.92 0.44
296283 Buchanan-----	90	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Very limited Depth to saturated zone Slope Seepage	1.00 0.68 0.53
296288 Chippewa-----	48	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Very limited Depth to saturated zone Seepage Slope	1.00 0.53 0.08
Norwich-----	48	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Very limited Depth to saturated zone Seepage Slope	1.00 0.53 0.08
296289 Chippewa-----	47	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Very limited Depth to saturated zone Seepage Slope	1.00 0.53 0.32
Norwich-----	47	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Very limited Depth to saturated zone Seepage Slope	1.00 0.53 0.32
296295 Udorthents, cut and fill-----	90	Not rated		Not rated	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
296297 Dekalb-----	100	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard	1.00
		Filtering	1.00	bedrock	
		capacity		Slope	1.00
		Seepage, bottom	1.00	Seepage	1.00
		layer		Large stones	0.61
		Slope	1.00		
		Large stones	0.03		
296298 Dekalb-----	100	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard	1.00
		Filtering	1.00	bedrock	
		capacity		Slope	1.00
		Slope	1.00	Seepage	1.00
		Seepage, bottom	1.00	Large stones	0.61
		layer			
		Large stones	0.03		
296303 Hazleton-----	100	Very limited		Very limited	
		Seepage, bottom	1.00	Slope	1.00
		layer		Seepage	1.00
		Filtering	1.00	Large stones	0.86
		capacity		Depth to hard	0.01
		Slope	1.00	bedrock	
		Depth to bedrock	0.34		
		Large stones	0.07		
296304 Holly-----	100	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to	1.00	Depth to	1.00
		saturated zone		saturated zone	
		Seepage, bottom	1.00	Seepage	1.00
		layer			
		Slow water	0.46		
		movement			
296311 Lackawanna-----	40	Very limited		Very limited	
		Depth to	1.00	Slope	1.00
		saturated zone		Depth to	0.64
		Slow water	1.00	saturated zone	
		movement		Seepage	0.53
		Slope	1.00	Large stones	0.01
Bath-----	30	Very limited		Very limited	
		Depth to	1.00	Slope	1.00
		saturated zone		Depth to	0.68
		Slow water	1.00	saturated zone	
		movement		Seepage	0.53
		Slope	1.00		

# Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
296312 Lackawanna-----	80	Very limited Depth to saturated zone Slow water movement	1.00  1.00	Somewhat limited Slope Depth to saturated zone Seepage Large stones	0.92 0.64 0.53 0.01
296313 Lackawanna-----	80	Very limited Depth to saturated zone Slow water movement Slope	1.00  1.00 0.63	Very limited Slope Depth to saturated zone Seepage Large stones	1.00 0.64 0.53 0.01
296315 Lackawanna-----	80	Very limited Depth to saturated zone Slow water movement	1.00  1.00	Somewhat limited Slope Depth to saturated zone Seepage Large stones	0.92 0.64 0.53 0.01
296316 Lackawanna-----	80	Very limited Depth to saturated zone Slow water movement Slope	1.00  1.00 1.00	Very limited Slope Depth to saturated zone Seepage Large stones	1.00 0.64 0.53 0.01
296317 Laidig-----	100	Very limited Depth to saturated zone Slow water movement	1.00  1.00	Very limited Seepage Slope Depth to saturated zone	1.00 0.32 0.19
296326 Lordstown-----	85	Very limited Depth to bedrock Slow water movement Large stones	1.00 0.46 0.10	Very limited Depth to hard bedrock Large stones Slope Seepage	1.00 0.96 0.92 0.53
296327 Lordstown-----	85	Very limited Depth to bedrock Slope Slow water movement Large stones	1.00 1.00 0.46 0.10	Very limited Depth to hard bedrock Slope Large stones Seepage	1.00 1.00 0.96 0.53
296328 Lordstown-----	40	Very limited Depth to bedrock Slope Slow water movement	1.00 1.00 0.46	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.53



# Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
296328 Oquaga-----	35	Very limited Depth to bedrock Slope Slow water movement	1.00 1.00 0.46	Very limited Depth to hard bedrock Slope Seepage Large stones	1.00 1.00 0.53 0.10
296329 Mardin-----	85	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Very limited Depth to saturated zone Slope Seepage	1.00 0.92 0.53
296330 Mardin-----	85	Very limited Depth to saturated zone Slow water movement Slope	1.00 1.00 0.63	Very limited Slope Depth to saturated zone Seepage	1.00 1.00 0.53
296331 Mardin-----	85	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Very limited Depth to saturated zone Slope Seepage	1.00 0.92 0.53
296332 Mardin-----	87	Very limited Depth to saturated zone Slow water movement Slope	1.00 1.00 1.00	Very limited Slope Depth to saturated zone Seepage	1.00 1.00 0.53
296335 Meckesville-----	100	Very limited Depth to saturated zone Slow water movement Slope	1.00 1.00 0.63	Very limited Slope Depth to saturated zone Seepage	1.00 1.00 0.53
296337 Meckesville-----	100	Very limited Depth to saturated zone Slow water movement Slope	1.00 1.00 1.00	Very limited Slope Depth to saturated zone Seepage	1.00 1.00 0.53
296338 Morris-----	80	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Very limited Depth to saturated zone Slope	1.00 0.92

# Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
296339 Morris-----	75	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Very limited Depth to saturated zone Seepage Large stones Slope	1.00 0.53 0.46 0.32
296340 Morris-----	80	Very limited Depth to saturated zone Slow water movement Slope	1.00 1.00 0.16	Very limited Depth to saturated zone Slope Seepage Large stones	1.00 1.00 0.53 0.46
296341 Freetown, mucky peat	100	Very limited Ponding Depth to saturated zone Seepage, bottom layer	1.00 1.00 1.00	Very limited Ponding Organic matter content Depth to saturated zone Seepage	1.00 1.00 1.00 1.00
296342 Paupack, mucky peat (shallow)-----	100	Very limited Ponding Depth to saturated zone Subsidence Slow water movement	1.00 1.00 1.00 0.72	Very limited Ponding Organic matter content Depth to saturated zone Seepage	1.00 1.00 1.00 1.00
296343 Oquaga-----	50	Very limited Depth to bedrock Slow water movement	1.00 0.46	Very limited Depth to hard bedrock Slope Seepage	1.00 0.92 0.53
Lackawanna-----	35	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Somewhat limited Slope Depth to saturated zone Seepage	0.92 0.64 0.53
296344 Oquaga-----	55	Very limited Depth to bedrock Slope Slow water movement	1.00 0.63 0.46	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.53
Lackawanna-----	30	Very limited Depth to saturated zone Slow water movement Slope	1.00 1.00 0.63	Very limited Slope Depth to saturated zone Seepage	1.00 0.64 0.53

# Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
296346 Oquaga-----	50	Very limited Depth to bedrock Slow water movement	1.00 0.46	Very limited Depth to hard bedrock Seepage Slope Large stones	1.00 0.53 0.32 0.10
Lackawanna-----	35	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Somewhat limited Depth to saturated zone Seepage Slope Large stones	0.64 0.53 0.32 0.01
296347 Oquaga-----	60	Very limited Depth to bedrock Slope Slow water movement	1.00 1.00 0.46	Very limited Depth to hard bedrock Slope Seepage Large stones	1.00 1.00 0.53 0.10
Lackawanna-----	30	Very limited Depth to saturated zone Slow water movement Slope	1.00 1.00 1.00	Very limited Slope Depth to saturated zone Seepage Large stones	1.00 0.64 0.53 0.01
296348 Philo-----	85	Very limited Flooding Depth to saturated zone Seepage, bottom layer Slow water movement	1.00 1.00 1.00 0.46	Very limited Flooding Seepage Depth to saturated zone	1.00 1.00 1.00
296349 Pope-----	90	Very limited Flooding Seepage, bottom layer Depth to saturated zone	1.00 1.00 0.40	Very limited Flooding Seepage	1.00 1.00
296350 Pope-----	90	Very limited Seepage, bottom layer Flooding Depth to saturated zone	1.00 0.40 0.40	Very limited Seepage Flooding	1.00 0.40

# Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
296351 Rexford, somewhat poorly drained-----	40	Very limited Depth to saturated zone Slow water movement Seepage, bottom layer	1.00 1.00 1.00 1.00	Very limited Seepage Depth to saturated zone	1.00 1.00
Rexford, poorly drained-----	35	Very limited Depth to saturated zone Slow water movement Seepage, bottom layer	1.00 1.00 1.00 1.00	Very limited Seepage Depth to saturated zone	1.00 1.00
296355 Sheffield-----	100	Very limited Ponding Depth to saturated zone Slow water movement	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
296363 Dystrochrepts, very stony-----	85	Very limited Depth to bedrock Slope Seepage, bottom layer Filtering capacity	1.00 1.00 1.00 1.00	Very limited Depth to hard bedrock Slope Seepage Large stones	1.00 1.00 1.00 0.04
296369 Wayland-----	100	Very limited Flooding Ponding Depth to saturated zone Slow water movement	1.00 1.00 1.00 1.00	Very limited Ponding Flooding Depth to saturated zone	1.00 1.00 1.00
296376 Wellsboro-----	80	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Very limited Depth to saturated zone Slope Seepage	1.00 0.92 0.53
296379 Wellsboro-----	85	Very limited Depth to saturated zone Slow water movement Slope	1.00 1.00 1.00 1.00	Very limited Slope Depth to saturated zone Seepage	1.00 1.00 0.53

# Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
296385 Wyoming-----	85	Very limited Filtering capacity Seepage, bottom layer	1.00 1.00	Very limited Seepage	1.00
296386 Wyoming-----	85	Very limited Filtering capacity Seepage, bottom layer	1.00 1.00	Very limited Seepage Slope	1.00 0.92
296387 Wyoming-----	85	Very limited Filtering capacity Seepage, bottom layer Slope	1.00 1.00 0.63	Very limited Slope Seepage	1.00 1.00
296388 Wyoming-----	85	Very limited Filtering capacity Slope Seepage, bottom layer	1.00 1.00 1.00	Very limited Slope Seepage	1.00 1.00
296389 Wyoming-----	100	Very limited Filtering capacity Slope Seepage, bottom layer	1.00 1.00 1.00	Very limited Slope Seepage	1.00 1.00
296390 Water-----	100	Not rated		Not rated	
297185 Edgemere-----	42	Very limited Ponding Depth to saturated zone Slow water movement	1.00 1.00 1.00	Very limited Ponding Organic matter content Depth to saturated zone Slope Seepage	1.00 1.00 1.00 0.92 0.53
Shohola-----	42	Very limited Depth to saturated zone Slow water movement Slope	1.00 1.00 0.04	Very limited Depth to saturated zone Slope Seepage	1.00 1.00 0.53

# Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
297186 Edgemere-----	75	Very limited Ponding Depth to saturated zone Slow water movement	1.00 1.00 1.00	Very limited Ponding Organic matter content Depth to saturated zone Seepage Large stones	1.00 1.00 1.00 0.53 0.48
297188 Manlius-----	40	Very limited Depth to bedrock Slope Slow water movement	1.00 1.00 0.46	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.53
Arnot-----	35	Very limited Depth to bedrock Slope Large stones	1.00 1.00 0.10	Very limited Depth to hard bedrock Slope Large stones Seepage	1.00 1.00 0.83 0.53
Rock outcrop-----	15	Not rated		Not rated	
297189 Manlius-----	40	Very limited Depth to bedrock Slope Slow water movement	1.00 1.00 0.46	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.53
Arnot-----	35	Very limited Depth to bedrock Slope Large stones	1.00 1.00 0.10	Very limited Depth to hard bedrock Slope Large stones Seepage	1.00 1.00 0.83 0.53
Rock outcrop-----	15	Not rated		Not rated	
297190 Braceville-----	82	Very limited Depth to saturated zone Slow water movement Seepage, bottom layer	1.00 1.00 1.00	Very limited Seepage Depth to saturated zone	1.00 0.94
297191 Wyalusing-----	85	Very limited Flooding Depth to saturated zone Filtering capacity Seepage, bottom layer	1.00 1.00 1.00 1.00	Very limited Flooding Seepage Depth to saturated zone	1.00 1.00 1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
297192 Pope-----	95	Very limited Flooding Seepage, bottom layer	1.00 1.00	Very limited Flooding Seepage	1.00 1.00
297193 Paupack-----	90	Very limited Ponding Depth to saturated zone Subsidence Slow water movement	1.00 1.00 1.00 0.72	Very limited Ponding Organic matter content Depth to saturated zone Seepage	1.00 1.00 1.00 1.00
297196 Freetown-----	94	Very limited Ponding Depth to saturated zone Seepage, bottom layer	1.00 1.00 1.00	Very limited Ponding Organic matter content Depth to saturated zone Seepage	1.00 1.00 1.00
297197 Manlius-----	90	Very limited Depth to bedrock Slow water movement	1.00 0.46	Very limited Depth to hard bedrock Slope Seepage	1.00 0.92 0.53
297198 Manlius-----	86	Very limited Depth to bedrock Slope Slow water movement	1.00 0.63 0.46	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.53
297201 Oquaga-----	75	Very limited Depth to bedrock Slope Slow water movement Large stones	1.00 1.00 0.46 0.02	Very limited Depth to hard bedrock Slope Seepage Large stones	1.00 1.00 0.53 0.06
297203 Delaware-----	93	Very limited Seepage, bottom layer Flooding	1.00 0.40	Very limited Seepage Flooding	1.00 0.40
297204 Delaware-----	82	Very limited Seepage, bottom layer Flooding	1.00 0.40	Very limited Seepage Slope Flooding	1.00 0.92 0.40

# Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
297205 Delaware-----	80	Very limited Seepage, bottom layer Slope Flooding	1.00  0.96 0.40	Very limited Slope Seepage Flooding	1.00 1.00 0.40
297209 Philo-----	85	Very limited Flooding Depth to saturated zone Seepage, bottom layer Slow water movement	1.00 1.00 1.00 0.46	Very limited Flooding Seepage Depth to saturated zone	1.00 1.00 1.00
297210 Barbour-----	85	Very limited Flooding Seepage, bottom layer Depth to saturated zone	1.00 1.00 0.84	Very limited Flooding Seepage Depth to saturated zone	1.00 1.00 0.17
297216 Wurtsboro-----	92	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Somewhat limited Depth to saturated zone Seepage Slope	0.99 0.53 0.32
297217 Wurtsboro-----	88	Very limited Depth to saturated zone Slow water movement Slope	1.00 1.00 0.63	Very limited Slope Depth to saturated zone Seepage	1.00 0.99 0.53
297227 Arnot-----	88	Very limited Depth to bedrock Slope	1.00 0.04	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.53
297228 Arnot-----	85	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.53
297229 Wyoming-----	90	Very limited Filtering capacity Seepage, bottom layer Large stones	1.00 1.00 0.26	Very limited Seepage Large stones Slope	1.00 0.84 0.68



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Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
297230 Wyoming-----	90	Very limited Filtering capacity Seepage, bottom layer Slope	1.00 1.00 0.63	Very limited Slope Seepage	1.00 1.00
297231 Wyoming-----	90	Very limited Filtering capacity Slope Seepage, bottom layer Large stones	1.00 1.00 1.00 0.53	Very limited Slope Seepage Large stones	1.00 1.00 1.00
297236 Suncook-----	91	Very limited Flooding Filtering capacity Seepage, bottom layer	1.00 1.00 1.00	Very limited Flooding Seepage Slope	1.00 1.00 0.08
297237 Mardin-----	85	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Very limited Depth to saturated zone Seepage Slope	1.00 0.53 0.32
297238 Mardin-----	85	Very limited Depth to saturated zone Slow water movement Slope	1.00 1.00 0.63	Very limited Slope Depth to saturated zone Seepage	1.00 1.00 0.53
297239 Mardin-----	85	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Very limited Depth to saturated zone Seepage Slope Large stones	1.00 0.53 0.32 0.08
297240 Mardin-----	85	Very limited Depth to saturated zone Slow water movement Slope	1.00 1.00 0.63	Very limited Slope Depth to saturated zone Seepage Large stones	1.00 1.00 0.53 0.08
297241 Unadilla-----	90	Somewhat limited Slow water movement	0.46	Somewhat limited Seepage	0.53

Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
297242					
Shohola-----	62	Very limited		Very limited	
		Depth to	1.00	Depth to	1.00
		saturated zone		saturated zone	
		Slow water	1.00	Seepage	0.53
		movement		Slope	0.32
Edgemere-----	29	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Depth to	1.00	Organic matter	1.00
		saturated zone		content	
		Slow water	1.00	Depth to	1.00
		movement		saturated zone	
				Seepage	0.53
				Slope	0.32
297243					
Shohola-----	62	Very limited		Very limited	
		Depth to	1.00	Slope	1.00
		saturated zone		Depth to	1.00
		Slow water	1.00	saturated zone	
		movement		Seepage	0.53
		Slope	0.63		
Edgemere-----	29	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Depth to	1.00	Organic matter	1.00
		saturated zone		content	
		Slow water	1.00	Slope	1.00
		movement		Depth to	1.00
		Slope	0.63	saturated zone	
				Seepage	0.53
297244					
Lordstown-----	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard	1.00
		Slow water	0.46	bedrock	
		movement		Seepage	0.53
				Slope	0.32
Swartswood-----	35	Very limited		Somewhat limited	
		Depth to	1.00	Seepage	0.53
		saturated zone		Slope	0.32
		Slow water	1.00	Depth to	0.19
		movement		saturated zone	
297247					
Chenango-----	86	Very limited		Very limited	
		Seepage, bottom	1.00	Seepage	1.00
		layer		Slope	0.32
297248					
Chenango-----	85	Very limited		Very limited	
		Seepage, bottom	1.00	Slope	1.00
		layer		Seepage	1.00
		Slope	0.63		

# Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
297249 Chenango-----	90	Very limited Slope Seepage, bottom layer	1.00 1.00	Very limited Slope Seepage	1.00 1.00
297253 Craigs ville-----	50	Very limited Flooding Seepage, bottom layer Filtering capacity Large stones	1.00 1.00 1.00 0.99	Very limited Flooding Seepage Large stones Slope	1.00 1.00 1.00 0.08
Wyoming-----	40	Very limited Filtering capacity Seepage, bottom layer	1.00 1.00	Very limited Seepage Slope	1.00 0.32
297254 Pits, shale-----	40	Not rated		Not rated	
Pits, gravel-----	40	Not rated		Not rated	
298049 Wurtsboro, extremely stony----	90	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Very limited Depth to saturated zone Seepage Slope	1.00 1.00 0.32
298050 Wurtsboro, extremely stony----	60	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Very limited Depth to saturated zone Seepage Slope	1.00 1.00 0.32
Swartswood, extremely stony----	40	Very limited Slow water movement	1.00	Very limited Seepage Slope	1.00 0.32
298051 Wurtsboro, extremely stony----	60	Very limited Depth to saturated zone Slow water movement Slope	1.00 1.00 0.63	Very limited Slope Depth to saturated zone Seepage	1.00 1.00 1.00
Swartswood, extremely stony----	40	Very limited Slow water movement Slope	1.00 0.63	Very limited Slope Seepage	1.00 1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
298075 Colonie-----	80	Very limited Filtering capacity Seepage, bottom layer	1.00  1.00	Very limited Seepage Slope	1.00 0.92
298188 Lackawanna, extremely stony----	85	Very limited Slow water movement Slope	1.00  1.00	Very limited Slope Seepage	1.00 0.50
298189 Lackawanna, extremely stony----	85	Very limited Slow water movement Slope	1.00  0.63	Very limited Slope Seepage	1.00 0.50
298221 Swartswood, extremely stony----	90	Very limited Slow water movement	1.00	Very limited Seepage Slope	1.00 0.32
298222 Swartswood, extremely stony----	90	Very limited Slow water movement Slope	1.00  0.63	Very limited Slope Seepage	1.00 1.00
298223 Swartswood, extremely stony----	85	Very limited Slow water movement Slope	1.00  1.00	Very limited Slope Seepage	1.00 1.00
298255 Delaware, rarely flooded-----	80	Very limited Seepage, bottom layer Flooding	1.00  0.40	Very limited Seepage Slope Flooding	1.00 0.92 0.40
298256 Delaware, rarely flooded-----	80	Very limited Seepage, bottom layer Flooding	1.00  0.40	Very limited Seepage Flooding	1.00 0.40
298257 Wallpack-----	85	Very limited Slow water movement Slope	1.00  0.63	Very limited Slope Seepage	1.00 0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
298258 Wallpack-----	85	Very limited Slow water movement Slope	1.00  1.00	Very limited Slope Seepage	1.00 0.50
298259 Wallpack, extremely stony-----	85	Very limited Slow water movement	1.00	Somewhat limited Seepage Slope	0.50 0.32
298260 Wallpack, extremely stony-----	85	Very limited Slow water movement Slope	1.00  0.63	Very limited Slope Seepage	1.00 0.50
298261 Wallpack-----	85	Very limited Slow water movement	1.00	Somewhat limited Seepage Slope	0.50 0.32
298262 Wallpack, extremely stony-----	85	Very limited Slow water movement Slope	1.00  1.00	Very limited Slope Seepage	1.00 0.50
298265 Venango, extremely stony-----	90	Very limited Depth to saturated zone Slow water movement	1.00  1.00	Very limited Depth to saturated zone Seepage Slope	1.00 0.50 0.32
298266 Venango, extremely stony-----	85	Very limited Depth to saturated zone Slow water movement Slope	1.00  1.00  0.63	Very limited Slope Depth to saturated zone Seepage	1.00 1.00 0.50
298409 Swartswood, extremely stony----	90	Very limited Slow water movement	1.00	Very limited Seepage Slope	1.00 0.32
298411 Swartswood, extremely stony----	90	Very limited Slow water movement	1.00	Very limited Slope Seepage	1.00 1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
298413 Swartswood, extremely stony----	85	Very limited Slow water movement	1.00	Very limited Slope Seepage	1.00 1.00
318498 Hazen, very stony---	60	Very limited Seepage, bottom layer Filtering capacity	1.00 1.00	Very limited Seepage Slope	1.00 0.92
Hoosic, very stony--	35	Very limited Filtering capacity Seepage, bottom layer	1.00 1.00	Very limited Seepage Slope	1.00 0.92
318533 Hazen, very stony---	50	Very limited Seepage, bottom layer Filtering capacity	1.00 1.00	Very limited Seepage	1.00
Hoosic, very stony--	40	Very limited Filtering capacity Seepage, bottom layer	1.00 1.00	Very limited Seepage	1.00
319783 Catden-----	85	Very limited Ponding Depth to saturated zone Slow water movement	1.00 1.00 0.50	Very limited Ponding Organic matter content Depth to saturated zone Seepage	1.00 1.00 1.00 0.50
319784 Fredon, very stony--	50	Very limited Depth to saturated zone Seepage, bottom layer Filtering capacity	1.00 1.00 1.00	Very limited Seepage Depth to saturated zone	1.00 1.00
Halsey, very stony--	40	Very limited Ponding Depth to saturated zone Seepage, bottom layer Filtering capacity	1.00 1.00 1.00	Very limited Ponding Seepage Depth to saturated zone	1.00 1.00 1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
543222 Andover, extremely stony-----	55	Very limited Depth to saturated zone Slow water movement	1.00 1.00 1.00	Very limited Depth to saturated zone Seepage Slope	1.00 0.53 0.32
Buchanan, extremely stony-----	40	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Somewhat limited Depth to saturated zone Seepage Slope	0.94 0.53 0.32
543243 Berks-----	65	Very limited Depth to bedrock Slope Seepage, bottom layer	1.00 1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 1.00
Weikert-----	25	Very limited Depth to bedrock Slope Seepage, bottom layer	1.00 1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 1.00
543246 Buchanan-----	75	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Somewhat limited Depth to saturated zone Slope Seepage	0.94 0.92 0.53
543247 Buchanan, extremely stony-----	80	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Somewhat limited Depth to saturated zone Seepage Slope	0.94 0.53 0.32
543257 Chippewa-----	90	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Very limited Organic matter content Depth to saturated zone Seepage	1.00 1.00 0.53
543258 Chippewa-----	90	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Very limited Organic matter content Depth to saturated zone Slope Seepage	1.00 1.00 0.68 0.53

# Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
543259 Chippewa, extremely stony-----	90	Very limited		Very limited	
		Depth to saturated zone	1.00	Organic matter content	1.00
		Slow water movement	1.00	Depth to saturated zone	1.00
				Seepage	0.53
				Slope	0.32
543271 Delaware-----	90	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
		Flooding	0.40	Flooding	0.40
543276 Fluvaquents-----	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00		
543292 Hazleton, extremely stony-----	90	Very limited		Very limited	
		Seepage, bottom layer	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00
		Slope	1.00	Large stones	0.98
		Depth to bedrock	0.50	Depth to hard bedrock	0.08
		Large stones	0.10		
543293 Hazleton, extremely stony-----	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
		Depth to bedrock	0.24	Large stones	0.98
		Large stones	0.10		
543299 Laidig, extremely stony-----	90	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Seepage	1.00
				Slope	0.32
543300 Laidig, extremely stony-----	90	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Slow water movement	1.00	Depth to saturated zone	1.00
		Slope	1.00	Seepage	1.00



# Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
543304 Laidig-----	50	Very limited Depth to saturated zone Slow water movement Slope	1.00 1.00 1.00	Very limited Slope Depth to saturated zone Seepage	1.00 1.00 1.00
Rubble land-----	40	Very limited Filtering capacity Slope Large stones Seepage, bottom layer Depth to bedrock	1.00 1.00 1.00 1.00 1.00 0.24	Very limited Slope Large stones Seepage	1.00 1.00 1.00
543318 Rubble land-----	75	Very limited Filtering capacity Large stones Seepage, bottom layer Slope Depth to bedrock	1.00 1.00 1.00 1.00 1.00 0.20	Very limited Large stones Seepage Slope	1.00 1.00 1.00
543327 Swartswood-----	90	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Somewhat limited Slope Seepage Depth to saturated zone	0.92 0.53 0.02
543328 Swartswood-----	90	Very limited Depth to saturated zone Slow water movement Slope	1.00 1.00 1.00 0.63	Very limited Slope Seepage Depth to saturated zone	1.00 0.53 0.02
543330 Swartswood, extremely stony----	50	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Somewhat limited Seepage Slope Depth to saturated zone	0.53 0.32 0.02
Wurtsboro, extremely stony----	30	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Somewhat limited Depth to saturated zone Seepage Slope	0.75 0.53 0.32

# Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
543331 Swartswood, extremely stony----	50	Very limited Depth to saturated zone Slow water movement Slope	1.00 1.00 1.00	Very limited Slope Seepage Depth to saturated zone	1.00 0.53 0.02
Wurtsboro, extremely stony----	30	Very limited Depth to saturated zone Slow water movement Slope	1.00 1.00 1.00	Very limited Slope Depth to saturated zone Seepage	1.00 0.75 0.53
543359 Volusia-----	85	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Very limited Depth to saturated zone Slope Seepage	1.00 0.68 0.53
543360 Volusia, extremely stony-----	85	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Very limited Depth to saturated zone Seepage Slope	1.00 0.53 0.32
543374 Wurtsboro-----	90	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Somewhat limited Slope Depth to saturated zone Seepage	0.92 0.75 0.53
543375 Wurtsboro-----	90	Very limited Depth to saturated zone Slow water movement Slope	1.00 1.00 0.63	Very limited Slope Depth to saturated zone Seepage	1.00 0.75 0.53
612280 Scio-----	80	Very limited Depth to saturated zone Slow water movement	1.00 0.47	Very limited Depth to saturated zone Seepage	1.00 0.53
612666 Colonie-----	80	Very limited Filtering capacity Seepage, bottom layer	1.00 1.00	Very limited Seepage	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
612668					
Hoosic, very stony--	60	Very limited		Very limited	
		Filtering	1.00	Slope	1.00
		capacity		Seepage	1.00
		Seepage, bottom	1.00		
		layer			
		Slope	0.63		
Hazen, very stony---	30	Very limited		Very limited	
		Seepage, bottom	1.00	Slope	1.00
		layer		Seepage	1.00
		Filtering	1.00		
		capacity			
		Slope	0.63		
612724					
Lordstown, very rocky-----	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard	1.00
		Slope	1.00	bedrock	
		Slow water	0.50	Slope	1.00
		movement		Seepage	0.50
Wallpack, very rocky	40	Very limited		Very limited	
		Slow water	1.00	Slope	1.00
		movement		Seepage	0.50
		Slope	1.00		
612732					
Atherton, very poorly drained-----	60	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Depth to	1.00	Depth to	1.00
		saturated zone		saturated zone	
		Seepage, bottom	1.00	Seepage	1.00
		layer			
		Slow water	0.72		
		movement			
Atherton, poorly drained-----	30	Very limited		Very limited	
		Depth to	1.00	Organic matter	1.00
		saturated zone		content	
		Slow water	0.50	Depth to	1.00
		movement		saturated zone	
				Seepage	0.50
612738					
Fluvaquents, occasionally flooded-----	90	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to	1.00	Seepage	1.00
		saturated zone		Depth to	1.00
		Seepage, bottom	1.00	saturated zone	
		layer			
		Slow water	0.50		
		movement			

# Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
612753 Wallpack, aeolian mantle, very stony-	85	Somewhat limited Slope Slow water movement	0.63 0.50	Very limited Slope Seepage	1.00 0.50
612756 Wallpack, aeolian mantle, very stony-	85	Somewhat limited Slow water movement	0.50	Somewhat limited Seepage Slope	0.50 0.32
612757 Wallpack, aeolian mantle, very stony-	85	Very limited Slope Slow water movement	1.00 0.50	Very limited Slope Seepage	1.00 0.50
612767 Wellsboro, extremely stony----	85	Very limited Depth to saturated zone Slow water movement Slope	1.00 1.00 0.63	Very limited Slope Depth to saturated zone Seepage	1.00 0.75 0.50
612768 Wellsboro, extremely stony----	85	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Somewhat limited Depth to saturated zone Seepage Slope	0.75 0.50 0.32
613393 Alden, extremely stony-----	90	Very limited Ponding Depth to saturated zone Slow water movement	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
613447 Unadilla-----	85	Very limited Seepage, bottom layer Slow water movement	1.00 0.47	Very limited Seepage	1.00
613448 Unadilla-----	85	Very limited Seepage, bottom layer Slow water movement	1.00 0.47	Very limited Seepage Slope	1.00 0.92

# Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
614075 Wurtsboro, extremely stony----	80	Very limited Depth to saturated zone Slow water movement Slope	1.00 1.00 1.00	Very limited Slope Depth to saturated zone Seepage	1.00 1.00 1.00
Swartswood, extremely stony----	20	Very limited Slow water movement Slope	1.00 1.00	Very limited Slope Seepage	1.00 1.00
620179 Arnot, very rocky---	55	Very limited Depth to bedrock	1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.50
Lordstown, very rocky-----	40	Very limited Depth to bedrock Slow water movement	1.00 0.50	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.50
620180 Arnot-----	45	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.50
Lordstown-----	40	Very limited Depth to bedrock Slope Slow water movement	1.00 1.00 0.50	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.50
Rock outcrop-----	15	Not rated		Not rated	
620181 Arnot-----	60	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.50
Lordstown-----	25	Very limited Depth to bedrock Slope Slow water movement	1.00 1.00 0.50	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.50
Rock outcrop-----	15	Not rated		Not rated	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
623089 Chippewa, extremely stony-----	80	Very limited Ponding Depth to saturated zone Slow water movement	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Seepage	1.00 1.00 0.50
623109 Farmington-----	50	Very limited Depth to bedrock	1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.50
Rock outcrop-----	40	Not rated		Not rated	
624811 Galway, very rocky--	80	Very limited Depth to bedrock Slope Slow water movement	1.00 1.00 0.50	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.50
624813 Lackawanna, extremely stony----	85	Very limited Slow water movement	1.00	Somewhat limited Seepage Slope	0.50 0.32
624816 Lordstown, very rocky-----	50	Very limited Depth to bedrock Slope Slow water movement	1.00 0.63 0.50	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.50
Wallpack, very rocky	35	Very limited Slow water movement Slope	1.00 0.63	Very limited Slope Seepage	1.00 0.50
624822 Lordstown-----	50	Very limited Depth to bedrock Slope Slow water movement	1.00 1.00 0.50	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.50
Wallpack-----	35	Very limited Slow water movement Slope	1.00 1.00	Very limited Slope Seepage	1.00 0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
624823					
Lordstown-----	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard	1.00
		Slope	0.63	bedrock	
		Slow water	0.50	Slope	1.00
		movement		Seepage	0.50
Wallpack-----	35	Very limited		Very limited	
		Slow water	1.00	Slope	1.00
		movement		Seepage	0.50
		Slope	0.63		
624824					
Lordstown-----	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard	1.00
		Slow water	0.50	bedrock	
		movement		Seepage	0.50
				Slope	0.32
Wallpack-----	35	Very limited		Somewhat limited	
		Slow water	1.00	Seepage	0.50
		movement		Slope	0.32
624826					
Manlius, very rocky-	60	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard	1.00
		Slope	1.00	bedrock	
		Seepage, bottom	1.00	Slope	1.00
		layer		Large stones	1.00
		Large stones	0.42	Seepage	1.00
Nassau, very rocky--	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard	1.00
		Slope	1.00	bedrock	
		Seepage, bottom	1.00	Slope	1.00
		layer		Large stones	1.00
		Large stones	0.39	Seepage	1.00
624827					
Nassau, very rocky--	55	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard	1.00
		Seepage, bottom	1.00	bedrock	
		layer		Seepage	1.00
		Large stones	0.15	Large stones	0.91
				Slope	0.32
Manlius, very rocky-	44	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard	1.00
		Seepage, bottom	1.00	bedrock	
		layer		Seepage	1.00
		Large stones	0.33	Large stones	0.98
				Slope	0.32
624828					
Nassau, very rocky--	55	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard	1.00
		Seepage, bottom	1.00	bedrock	
		layer		Slope	1.00
		Slope	0.63	Seepage	1.00
		Large stones	0.15	Large stones	0.91

Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
624828 Manlius, very rocky-	44	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard	1.00
		Seepage, bottom	1.00	bedrock	
		layer		Slope	1.00
		Slope	0.63	Seepage	1.00
		Large stones	0.33	Large stones	0.98
624829 Nassau, very rocky--	55	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard	1.00
		Slope	1.00	bedrock	
		Seepage, bottom	1.00	Slope	1.00
		layer		Seepage	1.00
		Large stones	0.15	Large stones	0.91
Manlius, very rocky-	44	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard	1.00
		Slope	1.00	bedrock	
		Seepage, bottom	1.00	Slope	1.00
		layer		Seepage	1.00
		Large stones	0.33	Large stones	0.98
624832 Nassau-----	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard	1.00
		Slope	1.00	bedrock	
		Seepage, bottom	1.00	Slope	1.00
		layer		Large stones	1.00
		Large stones	0.39	Seepage	1.00
Rock outcrop-----	45	Not rated		Not rated	
624841 Oquaga-----	60	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard	1.00
		Slope	1.00	bedrock	
		Slow water	0.50	Slope	1.00
		movement		Seepage	0.50
		Large stones	0.01	Large stones	0.10
Rock outcrop-----	25	Not rated		Not rated	
624845 Rock outcrop-----	45	Not rated		Not rated	
Farmington-----	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard	1.00
		Slope	1.00	bedrock	
				Slope	1.00
				Seepage	0.50
Galway-----	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard	1.00
		Slope	1.00	bedrock	
		Slow water	0.50	Slope	1.00
		movement		Seepage	0.50



# Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
624846					
Rock outcrop-----	40	Not rated		Not rated	
Arnot-----	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard	1.00
		Slope	1.00	bedrock	
				Slope	1.00
				Seepage	0.50
Rubble land-----	20	Very limited		Very limited	
		Filtering	1.00	Slope	1.00
		capacity		Large stones	1.00
		Slope	1.00	Seepage	1.00
		Large stones	1.00		
		Seepage, bottom	1.00		
		layer			
626816					
Udifluvents, occasionally flooded-----	90	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to	1.00	Seepage	1.00
		saturated zone		Depth to	1.00
		Seepage, bottom	1.00	saturated zone	
		layer			
635458					
Oquaga, very rocky--	55	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard	1.00
		Slope	0.63	bedrock	
		Slow water	0.50	Slope	1.00
		movement		Seepage	0.50
		Large stones	0.01	Large stones	0.10
Lackawanna, very rocky-----	30	Very limited		Very limited	
		Slow water	1.00	Slope	1.00
		movement		Seepage	0.50
		Slope	0.63		
635459					
Oquaga, very rocky--	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard	1.00
		Slope	1.00	bedrock	
		Slow water	0.50	Slope	1.00
		movement		Seepage	0.50
		Large stones	0.01	Large stones	0.10
Lackawanna, very rocky-----	35	Very limited		Very limited	
		Slow water	1.00	Slope	1.00
		movement		Seepage	0.50
		Slope	1.00		
740953					
Delaware, rarely flooded-----	80	Very limited		Very limited	
		Seepage, bottom	1.00	Seepage	1.00
		layer		Flooding	0.40
		Flooding	0.40		

# Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
740968					
Nassau, very rocky--	55	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard	1.00
		Seepage, bottom	1.00	bedrock	
		layer		Slope	1.00
		Slope	0.63	Large stones	0.91
		Large stones	0.15		
Manlius, very rocky-	44	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard	1.00
		Seepage, bottom	1.00	bedrock	
		layer		Slope	1.00
		Slope	0.63	Seepage	1.00
		Large stones	0.33	Large stones	0.98
740969					
Nassau, very rocky--	55	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard	1.00
		Slope	1.00	bedrock	
		Seepage, bottom	1.00	Slope	1.00
		layer		Seepage	1.00
		Large stones	0.15	Large stones	0.91
Manlius, very rocky-	44	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard	1.00
		Slope	1.00	bedrock	
		Seepage, bottom	1.00	Slope	1.00
		layer		Seepage	1.00
		Large stones	0.33	Large stones	0.98
740971					
Oquaga, very rocky--	55	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard	1.00
		Slope	0.63	bedrock	
		Slow water	0.50	Slope	1.00
		movement		Seepage	0.50
		Large stones	0.01	Large stones	0.10
Lackawanna, very rocky-----	30	Very limited		Very limited	
		Slow water	1.00	Slope	1.00
		movement		Seepage	0.50
		Slope	0.63		
740972					
Oquaga, very rocky--	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard	1.00
		Slope	1.00	bedrock	
		Slow water	0.50	Slope	1.00
		movement		Seepage	0.50
		Large stones	0.01	Large stones	0.10
Lackawanna, very rocky-----	35	Very limited		Very limited	
		Slow water	1.00	Slope	1.00
		movement		Seepage	0.50
		Slope	1.00		

# Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
740974 Oquaga-----	60	Very limited Depth to bedrock Slope Slow water movement Large stones	1.00 1.00 0.50 0.01	Very limited Depth to hard bedrock Slope Seepage Large stones	1.00 1.00 0.50 0.10
Rock outcrop-----	25	Not rated		Not rated	
740975 Rock outcrop-----	40	Not rated		Not rated	
Arnot-----	30	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.50
Rubble land-----	20	Very limited Filtering capacity Slope Large stones Seepage, bottom layer	1.00 1.00 1.00 1.00	Very limited Slope Large stones Seepage	1.00 1.00 1.00
740987 Scio-----	80	Very limited Depth to saturated zone Slow water movement	1.00 0.47	Very limited Depth to saturated zone Seepage	1.00 0.53
740988 Udifluvents, occasionally flooded-----	90	Very limited Flooding Depth to saturated zone Seepage, bottom layer	1.00 1.00 1.00	Very limited Flooding Seepage Depth to saturated zone	1.00 1.00 1.00
740991 Unadilla-----	85	Very limited Seepage, bottom layer Slow water movement	1.00 0.47	Very limited Seepage	1.00
740992 Unadilla-----	85	Very limited Seepage, bottom layer Slow water movement	1.00 0.47	Very limited Seepage Slope	1.00 0.92

# Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
740995 Wellsboro, extremely stony----	85	Very limited Depth to saturated zone Slow water movement	1.00  1.00	Somewhat limited Depth to saturated zone Seepage Slope	0.75  0.50 0.32
740996 Wellsboro, extremely stony----	85	Very limited Depth to saturated zone Slow water movement Slope	1.00  1.00  0.63	Very limited Slope Depth to saturated zone Seepage	1.00  0.75  0.50
741149 Lackawanna, extremely stony----	85	Very limited Slow water movement Slope	1.00  0.63	Very limited Slope Seepage	1.00  0.50
741150 Lackawanna, extremely stony----	85	Very limited Slow water movement Slope	1.00  1.00	Very limited Slope Seepage	1.00  0.50
801114 Oquaga-----	75	Very limited Depth to bedrock Slow water movement Large stones	1.00 0.50  0.01	Very limited Depth to hard bedrock Slope Seepage Large stones	1.00  1.00 0.50 0.10
Rock outcrop-----	15	Not rated		Not rated	
810906 Oquaga-----	75	Very limited Depth to bedrock Slow water movement Large stones	1.00 0.50  0.01	Very limited Depth to hard bedrock Slope Seepage Large stones	1.00  1.00 0.50 0.10
Rock outcrop-----	15	Not rated		Not rated	
1147465 Alden, extremely stony-----	90	Very limited Ponding Depth to saturated zone Slow water movement	1.00 1.00  1.00	Very limited Ponding Depth to saturated zone	1.00  1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1147467					
Arnot, very rocky----	55	Very limited Depth to bedrock	1.00	Very limited Depth to hard bedrock	1.00
				Slope	1.00
				Seepage	0.50
Lordstown, very rocky-----	40	Very limited Depth to bedrock	1.00	Very limited Depth to hard bedrock	1.00
		Slow water movement	0.50	Slope	1.00
				Seepage	0.50
1147468					
Arnot-----	45	Very limited Depth to bedrock	1.00	Very limited Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
Lordstown-----	40	Very limited Depth to bedrock	1.00	Very limited Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
Rock outcrop-----	15	Not rated		Not rated	
1147469					
Arnot-----	60	Very limited Depth to bedrock	1.00	Very limited Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
Lordstown-----	25	Very limited Depth to bedrock	1.00	Very limited Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
Rock outcrop-----	15	Not rated		Not rated	
1147470					
Atherton, very poorly drained-----	60	Very limited Ponding	1.00	Very limited Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
		Slow water movement	0.72		

# Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1147470 Atherton, poorly drained-----	30	Very limited Depth to saturated zone Slow water movement	1.00  0.50	Very limited Organic matter content Depth to saturated zone Seepage	1.00  1.00 0.50
1147471 Catden-----	85	Very limited Ponding Depth to saturated zone Slow water movement	1.00 1.00 0.50	Very limited Ponding Organic matter content Depth to saturated zone Seepage	1.00 1.00 1.00 0.50
1147474 Chippewa, extremely stony-----	80	Very limited Ponding Depth to saturated zone Slow water movement	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Seepage	1.00 1.00 0.50
1147475 Colonie-----	80	Very limited Filtering capacity Seepage, bottom layer	1.00 1.00	Very limited Seepage	1.00
1147478 Delaware, rarely flooded-----	80	Very limited Seepage, bottom layer Flooding	1.00 0.40	Very limited Seepage Slope Flooding	1.00 0.92 0.40
1147482 Fredon, very stony--	50	Very limited Depth to saturated zone Seepage, bottom layer Filtering capacity	1.00 1.00 1.00	Very limited Seepage Depth to saturated zone	1.00 1.00
Halsey, very stony--	40	Very limited Ponding Depth to saturated zone Seepage, bottom layer Filtering capacity	1.00 1.00 1.00 1.00	Very limited Ponding Seepage Depth to saturated zone	1.00 1.00 1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1147485					
Hazen, very stony---	60	Very limited Seepage, bottom layer Filtering capacity	1.00  1.00	Very limited Seepage Slope	1.00 0.92
Hoosic, very stony--	35	Very limited Filtering capacity Seepage, bottom layer	1.00  1.00	Very limited Seepage Slope	1.00 0.92
1147490					
Hoosic, very stony--	60	Very limited Filtering capacity Seepage, bottom layer Slope	1.00  1.00  0.63	Very limited Slope Seepage	1.00 1.00
Hazen, very stony---	30	Very limited Seepage, bottom layer Filtering capacity Slope	1.00  1.00  0.63	Very limited Slope Seepage	1.00 1.00
1147491					
Hoosic, very stony--	50	Very limited Filtering capacity Slope Seepage, bottom layer	1.00  1.00  1.00	Very limited Slope Seepage	1.00 1.00
Otisville, very stony-----	40	Very limited Slope Seepage, bottom layer Filtering capacity	1.00  1.00  1.00	Very limited Slope Seepage	1.00 1.00
1147492					
Lackawanna, extremely stony----	85	Very limited Slow water movement	1.00	Somewhat limited Seepage Slope	0.50 0.32
1147500					
Wurtsboro, extremely stony----	90	Very limited Depth to saturated zone Slow water movement	1.00  1.00	Very limited Depth to saturated zone Seepage Slope	1.00  1.00 0.32

# Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1147501 Wurtsboro, extremely stony----	60	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Very limited Depth to saturated zone Seepage Slope	1.00 1.00 0.32
Swartswood, extremely stony----	40	Very limited Slow water movement	1.00	Very limited Seepage Slope	1.00 0.32
1147502 Wurtsboro, extremely stony----	60	Very limited Depth to saturated zone Slow water movement Slope	1.00 1.00 0.63	Very limited Slope Depth to saturated zone Seepage	1.00 1.00 1.00
Swartswood, extremely stony----	40	Very limited Slow water movement Slope	1.00 0.63	Very limited Slope Seepage	1.00 1.00
1147527 Udorthents-----	60	Very limited Seepage, bottom layer	1.00	Very limited Seepage Slope	1.00 0.32
Urban land-----	40	Not rated		Not rated	
1147532 Udorthents-----	100	Very limited Seepage, bottom layer	1.00	Very limited Seepage Slope	1.00 0.32
1147533 Wurtsboro, extremely stony----	80	Very limited Depth to saturated zone Slow water movement Slope	1.00 1.00 1.00	Very limited Slope Depth to saturated zone Seepage	1.00 1.00 1.00
Swartswood, extremely stony----	20	Very limited Slow water movement Slope	1.00 1.00	Very limited Slope Seepage	1.00 1.00
1948749 Arlot-----	90	Very limited Depth to bedrock	1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 0.92 0.53



Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1948750 Arnot-----	90	Very limited Depth to bedrock Slope	1.00 0.63	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.53
1948751 Arnot-----	90	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.53
1948774 Conotton-----	90	Very limited Filtering capacity Seepage, bottom layer	1.00 1.00	Very limited Seepage Slope	1.00 0.92
1948775 Conotton-----	95	Very limited Filtering capacity Seepage, bottom layer Slope	1.00 1.00 1.00 0.63	Very limited Slope Seepage	1.00 1.00
1948776 Conotton-----	95	Very limited Filtering capacity Slope Seepage, bottom layer	1.00 1.00 1.00 1.00	Very limited Slope Seepage	1.00 1.00
1948777 Conotton-----	95	Very limited Filtering capacity Slope Seepage, bottom layer	1.00 1.00 1.00 1.00	Very limited Slope Seepage	1.00 1.00
1948797 Manlius-----	90	Very limited Depth to bedrock Slow water movement	1.00 0.46	Very limited Depth to hard bedrock Slope Seepage	1.00 0.92 0.53
1948802 Manlius-----	90	Very limited Depth to bedrock Slope Slow water movement	1.00 0.63 0.46	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.53

# Soil Survey of Delaware Water Gap National Recreation Area

Table 10.--Sewage Disposal--Continued

Map unit symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1948818 Manlius-----	90	Very limited Depth to bedrock Slope Slow water movement	1.00 1.00 0.46	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.53
1948832 Penargyl-----	90	Very limited Seepage, bottom layer Slow water movement	1.00 0.46	Somewhat limited Slope Seepage	0.92 0.53
1948846 Phelps-----	90	Very limited Depth to saturated zone Seepage, bottom layer Slow water movement	1.00 1.00 0.46	Very limited Seepage Depth to saturated zone Slope	1.00 1.00 0.68
1948855 Udorthents, loamy---	95	Very limited Depth to saturated zone Seepage, bottom layer	1.00 1.00	Very limited Depth to saturated zone Seepage Slope	1.00 1.00 0.32
1948989 Urban land-----	65	Not rated		Not rated	
Delaware-----	25	Very limited Seepage, bottom layer Flooding	1.00 0.40	Very limited Seepage Flooding Slope	1.00 0.40 0.32

# Soil Survey of Delaware Water Gap National Recreation Area

Table 11.--Source of Gravel and Sand

[Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table]

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class	Value	Rating class	Value
290836 Hoosic, very stony--	50	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.01
		Bottom layer	0.00	Bottom layer	0.20
Otisville, very stony-----	40	Poor		Good	
		Bottom layer	0.00	Thickest layer	0.19
		Thickest layer	0.00		
296265 Alden-----	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296269 Fluvents, (alluvial land)-----	70	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.04
296271 Alvira-----	55	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Watson-----	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296272 Bath-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296273 Bath-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296274 Bath-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296275 Bath-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 11.--Source of Gravel and Sand--Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class	Value	Rating class	Value
296276 Bath-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296277 Benson-----	55	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
296278 Benson-----	60	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rock outcrop-----	20	Not rated		Not rated	
296279 Benson-----	60	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rock outcrop-----	25	Not rated		Not rated	
296280 Braceville-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296281 Braceville-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296283 Buchanan-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296288 Chippewa-----	48	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Norwich-----	48	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296289 Chippewa-----	47	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Norwich-----	47	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296295 Udorthents, cut and fill-----	90	Not rated		Not rated	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 11.--Source of Gravel and Sand--Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class	Value	Rating class	Value
296297 Dekalb-----	100	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.03
		Bottom layer	0.00	Thickest layer	0.04
296298 Dekalb-----	100	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.03
		Bottom layer	0.00	Thickest layer	0.04
296303 Hazleton-----	100	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.06
		Thickest layer	0.00	Thickest layer	0.06
296304 Holly-----	100	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.64
296311 Lackawanna-----	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Bath-----	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296312 Lackawanna-----	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296313 Lackawanna-----	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296315 Lackawanna-----	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296316 Lackawanna-----	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296317 Laidig-----	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296326 Lordstown-----	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 11.--Source of Gravel and Sand--Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class	Value	Rating class	Value
296327 Lordstown-----	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
296328 Lordstown-----	40	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Oquaga-----	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296329 Mardin-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296330 Mardin-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296331 Mardin-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296332 Mardin-----	87	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296335 Meckesville-----	100	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
296337 Meckesville-----	100	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
296338 Morris-----	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296339 Morris-----	75	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296340 Morris-----	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296341 Freetown, mucky peat	100	Not rated		Not rated	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 11.--Source of Gravel and Sand--Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class	Value	Rating class	Value
296342 Paupack, mucky peat (shallow)-----	100	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.02
296343 Oquaga-----	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Lackawanna-----	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296344 Oquaga-----	55	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Lackawanna-----	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296346 Oquaga-----	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Lackawanna-----	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296347 Oquaga-----	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Lackawanna-----	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296348 Philo-----	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.01
296349 Pope-----	90	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
296350 Pope-----	90	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 11.--Source of Gravel and Sand--Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class	Value	Rating class	Value
296351 Rexford, somewhat poorly drained-----	40	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.06	Bottom layer	0.04
Rexford, poorly drained-----	35	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.06	Bottom layer	0.04
296355 Sheffield-----	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296363 Dystrochrepts, very stony-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296369 Wayland-----	100	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296376 Wellsboro-----	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296379 Wellsboro-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
296385 Wyoming-----	85	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.03
		Bottom layer	0.06	Bottom layer	0.15
296386 Wyoming-----	85	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.03
		Bottom layer	0.06	Bottom layer	0.15
296387 Wyoming-----	85	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.03
		Bottom layer	0.06	Bottom layer	0.15
296388 Wyoming-----	85	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.03
		Bottom layer	0.06	Bottom layer	0.15
296389 Wyoming-----	100	Fair		Fair	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.06	Thickest layer	0.03



# Soil Survey of Delaware Water Gap National Recreation Area

Table 11.--Source of Gravel and Sand--Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class	Value	Rating class	Value
296390 Water-----	100	Not rated		Not rated	
297185 Edgemere-----	42	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.04
Shohola-----	42	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
297186 Edgemere-----	75	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.04
297188 Manlius-----	40	Fair		Poor	
		Thickest layer	0.19	Bottom layer	0.00
		Bottom layer	0.31	Thickest layer	0.00
Arnot-----	35	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
Rock outcrop-----	15	Not rated		Not rated	
297189 Manlius-----	40	Fair		Poor	
		Thickest layer	0.19	Bottom layer	0.00
		Bottom layer	0.31	Thickest layer	0.00
Arnot-----	35	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
Rock outcrop-----	15	Not rated		Not rated	
297190 Braceville-----	82	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.01
		Thickest layer	0.00	Bottom layer	0.08
297191 Wyalusing-----	85	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.00
297192 Pope-----	95	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.04
297193 Paupack-----	90	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.02
297196 Freetown-----	94	Not rated		Not rated	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 11.--Source of Gravel and Sand--Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class	Value	Rating class	Value
297197 Manlius-----	90	Fair		Poor	
		Thickest layer	0.19	Bottom layer	0.00
		Bottom layer	0.31	Thickest layer	0.00
297198 Manlius-----	86	Fair		Poor	
		Thickest layer	0.19	Bottom layer	0.00
		Bottom layer	0.31	Thickest layer	0.00
297201 Oquaga-----	75	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
297203 Delaware-----	93	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
297204 Delaware-----	82	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
297205 Delaware-----	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
297209 Philo-----	85	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.01
297210 Barbour-----	85	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.02
		Bottom layer	0.00	Bottom layer	0.69
297216 Wurtsboro-----	92	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.01
		Thickest layer	0.00	Thickest layer	0.01
297217 Wurtsboro-----	88	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
297227 Arnot-----	88	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
297228 Arnot-----	85	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 11.--Source of Gravel and Sand--Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class	Value	Rating class	Value
297229 Wyoming-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
297230 Wyoming-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
297231 Wyoming-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
297236 Suncook-----	91	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.08
		Thickest layer	0.00	Bottom layer	0.89
297237 Mardin-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
297238 Mardin-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
297239 Mardin-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
297240 Mardin-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
297241 Unadilla-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
297242 Shohola-----	62	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Edgemere-----	29	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.02
		Thickest layer	0.00	Bottom layer	0.04
297243 Shohola-----	62	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Edgemere-----	29	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.02
		Thickest layer	0.00	Bottom layer	0.04

# Soil Survey of Delaware Water Gap National Recreation Area

Table 11.--Source of Gravel and Sand--Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class	Value	Rating class	Value
297244					
Lordstown-----	40	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.01
		Bottom layer	0.00	Bottom layer	0.02
Swartswood-----	35	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.01
		Thickest layer	0.00	Thickest layer	0.01
297247					
Chenango-----	86	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.06	Bottom layer	0.10
297248					
Chenango-----	85	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.06	Bottom layer	0.10
297249					
Chenango-----	90	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.06	Bottom layer	0.10
297253					
Craigsville-----	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Wyoming-----	40	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.06	Bottom layer	0.13
297254					
Pits, shale-----	40	Not rated		Not rated	
Pits, gravel-----	40	Not rated		Not rated	
298049					
Wurtsboro, extremely stony----	90	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.05
		Bottom layer	0.00	Thickest layer	0.05
298050					
Wurtsboro, extremely stony----	60	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.05
		Bottom layer	0.00	Thickest layer	0.05
Swartswood, extremely stony----	40	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.05
298051					
Wurtsboro, extremely stony----	60	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.05
		Bottom layer	0.00	Thickest layer	0.05

# Soil Survey of Delaware Water Gap National Recreation Area

Table 11.--Source of Gravel and Sand--Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class	Value	Rating class	Value
298051 Swartswood, extremely stony----	40	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.05
298075 Colonie-----	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.36
		Thickest layer	0.00	Bottom layer	0.81
298188 Lackawanna, extremely stony----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
298189 Lackawanna, extremely stony----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
298221 Swartswood, extremely stony----	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.05
298222 Swartswood, extremely stony----	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.05
298223 Swartswood, extremely stony----	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.05
298255 Delaware, rarely flooded-----	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
298256 Delaware, rarely flooded-----	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
298257 Wallpack-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 11.--Source of Gravel and Sand--Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class	Value	Rating class	Value
298258 Wallpack-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
298259 Wallpack, extremely stony-----	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
298260 Wallpack, extremely stony-----	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
298261 Wallpack-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
298262 Wallpack, extremely stony-----	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
298265 Venango, extremely stony-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
298266 Venango, extremely stony-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
298409 Swartswood, extremely stony----	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.05
298411 Swartswood, extremely stony----	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.05
298413 Swartswood, extremely stony----	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.05

# Soil Survey of Delaware Water Gap National Recreation Area

Table 11.--Source of Gravel and Sand--Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class	Value	Rating class	Value
318498					
Hazen, very stony---	60	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.26
		Bottom layer	0.12	Bottom layer	0.60
Hoosic, very stony--	35	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.01
		Bottom layer	0.00	Bottom layer	0.20
318533					
Hazen, very stony---	50	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.26
		Bottom layer	0.12	Bottom layer	0.60
Hoosic, very stony--	40	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.01
		Bottom layer	0.00	Bottom layer	0.20
319783					
Catden-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
319784					
Fredon, very stony--	50	Poor		Good	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00		
Halsey, very stony--	40	Fair		Good	
		Thickest layer	0.00	Thickest layer	0.07
		Bottom layer	0.07		
543222					
Andover, extremely stony-----	55	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Buchanan, extremely stony-----	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
543243					
Berks-----	65	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Weikert-----	25	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.31	Thickest layer	0.00
543246					
Buchanan-----	75	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 11.--Source of Gravel and Sand--Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class	Value	Rating class	Value
543247 Buchanan, extremely stony-----	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
543257 Chippewa-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
543258 Chippewa-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
543259 Chippewa, extremely stony-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
543271 Delaware-----	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.02
543276 Fluvaquents-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
543292 Hazleton, extremely stony-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
543293 Hazleton, extremely stony-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
543299 Laidig, extremely stony-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
543300 Laidig, extremely stony-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
543304 Laidig-----	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00



# Soil Survey of Delaware Water Gap National Recreation Area

Table 11.--Source of Gravel and Sand--Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class	Value	Rating class	Value
543304 Rubble land-----	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
543318 Rubble land-----	75	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
543327 Swartswood-----	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.01
543328 Swartswood-----	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.01
543330 Swartswood, extremely stony----	50	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.01
Wurtsboro, extremely stony----	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
543331 Swartswood, extremely stony----	50	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.01
Wurtsboro, extremely stony----	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
543359 Volusia-----	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
543360 Volusia, extremely stony-----	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
543374 Wurtsboro-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
543375 Wurtsboro-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 11.--Source of Gravel and Sand--Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class	Value	Rating class	Value
612280 Scio-----	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
612666 Colonie-----	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.36
		Thickest layer	0.00	Bottom layer	0.81
612668 Hoosic, very stony--	60	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.01
		Bottom layer	0.00	Bottom layer	0.20
Hazen, very stony---	30	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.26
		Bottom layer	0.12	Bottom layer	0.60
612724 Lordstown, very rocky-----	50	Fair		Poor	
		Thickest layer	0.07	Bottom layer	0.00
		Bottom layer	0.38	Thickest layer	0.00
Wallpack, very rocky	40	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
612732 Atherton, very poorly drained-----	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Atherton, poorly drained-----	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
612738 Fluvaquents, occasionally flooded-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
612753 Wallpack, aeolian mantle, very stony-	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
612756 Wallpack, aeolian mantle, very stony-	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 11.--Source of Gravel and Sand--Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class	Value	Rating class	Value
612757 Wallpack, aeolian mantle, very stony-	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Organic matter content	0.00	Thickest layer	0.00
		Bottom layer	0.00	Organic matter content	0.00
612767 Wellsboro, extremely stony----	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.05
612768 Wellsboro, extremely stony----	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.05
613393 Alden, extremely stony-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
613447 Unadilla-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
613448 Unadilla-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
614075 Wurtsboro, extremely stony----	80	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.05
		Bottom layer	0.00	Thickest layer	0.05
Swartswood, extremely stony----	20	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.05
620179 Arnot, very rocky---	55	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.62	Thickest layer	0.00
Lordstown, very rocky-----	40	Fair		Poor	
		Thickest layer	0.07	Bottom layer	0.00
		Bottom layer	0.38	Thickest layer	0.00
620180 Arnot-----	45	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.62	Thickest layer	0.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 11.--Source of Gravel and Sand--Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class	Value	Rating class	Value
620180					
Lordstown-----	40	Fair		Poor	
		Thickest layer	0.07	Bottom layer	0.00
		Bottom layer	0.38	Thickest layer	0.00
Rock outcrop-----	15	Not rated		Not rated	
620181					
Arnot-----	60	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.62	Thickest layer	0.00
Lordstown-----	25	Fair		Poor	
		Thickest layer	0.07	Bottom layer	0.00
		Bottom layer	0.38	Thickest layer	0.00
Rock outcrop-----	15	Not rated		Not rated	
623089					
Chippewa, extremely stony-----	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
623109					
Farmington-----	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop-----	40	Not rated		Not rated	
624811					
Galway, very rocky--	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
624813					
Lackawanna, extremely stony----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
624816					
Lordstown, very rocky-----	50	Fair		Poor	
		Thickest layer	0.07	Bottom layer	0.00
		Bottom layer	0.38	Thickest layer	0.00
Wallpack, very rocky	35	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
624822					
Lordstown-----	50	Fair		Poor	
		Thickest layer	0.07	Bottom layer	0.00
		Bottom layer	0.38	Thickest layer	0.00
Wallpack-----	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 11.--Source of Gravel and Sand--Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class	Value	Rating class	Value
624823					
Lordstown-----	50	Fair		Poor	
		Thickest layer	0.07	Bottom layer	0.00
		Bottom layer	0.38	Thickest layer	0.00
Wallpack-----	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
624824					
Lordstown-----	50	Fair		Poor	
		Thickest layer	0.07	Bottom layer	0.00
		Bottom layer	0.38	Thickest layer	0.00
Wallpack-----	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
624826					
Manlius, very rocky-	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Nassau, very rocky--	25	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
624827					
Nassau, very rocky--	55	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Manlius, very rocky-	44	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
624828					
Nassau, very rocky--	55	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Manlius, very rocky-	44	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
624829					
Nassau, very rocky--	55	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Manlius, very rocky-	44	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
624832					
Nassau-----	50	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rock outcrop-----	45	Not rated		Not rated	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 11.--Source of Gravel and Sand--Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class	Value	Rating class	Value
624841					
Oquaga-----	60	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rock outcrop-----	25	Not rated		Not rated	
624845					
Rock outcrop-----	45	Not rated		Not rated	
Farmington-----	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Galway-----	20	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
624846					
Rock outcrop-----	40	Not rated		Not rated	
Arnot-----	30	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.62	Thickest layer	0.00
Rubble land-----	20	Not rated		Not rated	
626816					
Udifluvents, occasionally flooded-----	90	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.10
		Thickest layer	0.00	Thickest layer	0.10
635458					
Oquaga, very rocky--	55	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Lackawanna, very rocky-----	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
635459					
Oquaga, very rocky--	50	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Lackawanna, very rocky-----	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
740953					
Delaware, rarely flooded-----	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 11.--Source of Gravel and Sand--Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class	Value	Rating class	Value
740968					
Nassau, very rocky--	55	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Manlius, very rocky-	44	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
740969					
Nassau, very rocky--	55	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Manlius, very rocky-	44	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
740971					
Oquaga, very rocky--	55	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Lackawanna, very rocky-----	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
740972					
Oquaga, very rocky--	50	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Lackawanna, very rocky-----	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
740974					
Oquaga-----	60	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rock outcrop-----	25	Not rated		Not rated	
740975					
Rock outcrop-----	40	Not rated		Not rated	
Arnot-----	30	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.62	Thickest layer	0.00
Rubble land-----	20	Not rated		Not rated	
740987					
Scio-----	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 11.--Source of Gravel and Sand--Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class	Value	Rating class	Value
740988 Udifluvents, occasionally flooded-----	90	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.10
		Thickest layer	0.00	Thickest layer	0.10
740991 Unadilla-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
740992 Unadilla-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
740995 Wellsboro, extremely stony----	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.05
740996 Wellsboro, extremely stony----	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.05
741149 Lackawanna, extremely stony----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
741150 Lackawanna, extremely stony----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
801114 Oquaga-----	75	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rock outcrop-----	15	Not rated		Not rated	
810906 Oquaga-----	75	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rock outcrop-----	15	Not rated		Not rated	
1147465 Alden, extremely stony-----	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00



# Soil Survey of Delaware Water Gap National Recreation Area

Table 11.--Source of Gravel and Sand--Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class	Value	Rating class	Value
1147467					
Arnot, very rocky---	55	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.62	Thickest layer	0.00
Lordstown, very rocky-----	40	Fair		Poor	
		Thickest layer	0.07	Bottom layer	0.00
		Bottom layer	0.38	Thickest layer	0.00
1147468					
Arnot-----	45	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.62	Thickest layer	0.00
Lordstown-----	40	Fair		Poor	
		Thickest layer	0.07	Bottom layer	0.00
		Bottom layer	0.38	Thickest layer	0.00
Rock outcrop-----	15	Not rated		Not rated	
1147469					
Arnot-----	60	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.62	Thickest layer	0.00
Lordstown-----	25	Fair		Poor	
		Thickest layer	0.07	Bottom layer	0.00
		Bottom layer	0.38	Thickest layer	0.00
Rock outcrop-----	15	Not rated		Not rated	
1147470					
Atherton, very poorly drained----	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Atherton, poorly drained-----	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
1147471					
Catden-----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
1147474					
Chippewa, extremely stony-----	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
1147475					
Colonie-----	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.36
		Thickest layer	0.00	Bottom layer	0.81

# Soil Survey of Delaware Water Gap National Recreation Area

Table 11.--Source of Gravel and Sand--Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class	Value	Rating class	Value
1147478 Delaware, rarely flooded-----	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
1147482 Fredon, very stony--	50	Poor		Good	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00		
Halsey, very stony--	40	Fair		Good	
		Thickest layer	0.00	Thickest layer	0.07
		Bottom layer	0.07		
1147485 Hazen, very stony---	60	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.26
		Bottom layer	0.12	Bottom layer	0.60
Hoosic, very stony--	35	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.01
		Bottom layer	0.00	Bottom layer	0.20
1147490 Hoosic, very stony--	60	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.01
		Bottom layer	0.00	Bottom layer	0.20
Hazen, very stony---	30	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.26
		Bottom layer	0.12	Bottom layer	0.60
1147491 Hoosic, very stony--	50	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.01
		Bottom layer	0.00	Bottom layer	0.20
Otisville, very stony-----	40	Poor		Good	
		Bottom layer	0.00	Thickest layer	0.19
		Thickest layer	0.00		
1147492 Lackawanna, extremely stony----	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
1147500 Wurtsboro, extremely stony----	90	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.05
		Bottom layer	0.00	Thickest layer	0.05
1147501 Wurtsboro, extremely stony----	60	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.05
		Bottom layer	0.00	Thickest layer	0.05

# Soil Survey of Delaware Water Gap National Recreation Area

Table 11.--Source of Gravel and Sand--Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class	Value	Rating class	Value
1147501 Swartswood, extremely stony----	40	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.05
1147502 Wurtsboro, extremely stony----	60	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.05
		Bottom layer	0.00	Thickest layer	0.05
Swartswood, extremely stony----	40	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.05
1147527 Udorthents-----	60	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.10
Urban land-----	40	Not rated		Not rated	
1147532 Udorthents-----	100	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.10
1147533 Wurtsboro, extremely stony----	80	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.05
		Bottom layer	0.00	Thickest layer	0.05
Swartswood, extremely stony----	20	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.05
1948749 Arnot-----	90	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
1948750 Arnot-----	90	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
1948751 Arnot-----	90	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
1948774 Conotton-----	90	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.12	Bottom layer	0.13

# Soil Survey of Delaware Water Gap National Recreation Area

Table 11.--Source of Gravel and Sand--Continued

Map unit symbol and soil name	Pct. of map unit	Gravel source		Sand source	
		Rating class	Value	Rating class	Value
1948775 Conotton-----	95	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.12	Bottom layer	0.13
1948776 Conotton-----	95	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.12	Bottom layer	0.13
1948777 Conotton-----	95	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.12	Bottom layer	0.13
1948797 Manlius-----	90	Fair		Poor	
		Thickest layer	0.16	Bottom layer	0.00
		Bottom layer	0.31	Thickest layer	0.00
1948802 Manlius-----	90	Fair		Poor	
		Thickest layer	0.16	Bottom layer	0.00
		Bottom layer	0.31	Thickest layer	0.00
1948818 Manlius-----	90	Fair		Poor	
		Thickest layer	0.16	Bottom layer	0.00
		Bottom layer	0.31	Thickest layer	0.00
1948832 Penargyl-----	90	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.38	Thickest layer	0.00
1948846 Phelps-----	90	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.38	Bottom layer	0.58
1948855 Udorthents, loamy---	95	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
1948989 Urban land-----	65	Not rated		Not rated	
Delaware-----	25	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.02

# Soil Survey of Delaware Water Gap National Recreation Area

Table 12.--Source of Reclamation Material, Roadfill, and Topsoil

[Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table]

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
290836 Hoosic, very stony--	50	Fair		Poor		Poor	
		Low content of organic matter	0.03	Slope	0.00	Slope	0.00
		Too acid	0.32	Cobbles	0.97	Rock fragments	0.00
		Droughty	0.58			Hard to reclaim (rock fragments)	0.00
Otisville, very stony-----	40	Poor		Poor		Poor	
		Too sandy	0.00	Slope	0.00	Slope	0.00
		Droughty	0.00			Too sandy	0.00
		Low content of organic matter	0.03			Rock fragments	0.00
296265 Alden-----	100	Fair		Poor		Poor	
		Too acid	0.97	Wetness	0.00	Wetness	0.00
		Water erosion	0.99			Hard to reclaim	0.92
		Low content of organic matter	0.99			(rock fragments)	
						Rock fragments	0.97
296269 Fluvents, (alluvial land)-----	70	Fair		Fair		Fair	
		Low content of organic matter	0.05	Wetness	0.14	Wetness	0.14
		Too acid	0.68			Rock fragments	0.50
		Water erosion	0.90				
296271 Alvira-----	55	Fair		Poor		Poor	
		Low content of organic matter	0.12	Wetness	0.00	Wetness	0.00
		Too acid	0.50			Rock fragments	0.00
						Too acid	0.59
Watson-----	35	Fair		Fair		Fair	
		Low content of organic matter	0.04	Wetness	0.14	Wetness	0.14
		Too acid	0.50	Shrink-swell	0.87	Rock fragments	0.50
						Too acid	0.88
296272 Bath-----	85	Fair		Fair		Poor	
		Low content of organic matter	0.08	Wetness	0.60	Hard to reclaim (rock fragments)	0.00
		Too acid	0.54			Rock fragments	0.00
		Droughty	0.86			Wetness	0.60
296273 Bath-----	85	Fair		Fair		Poor	
		Low content of organic matter	0.08	Wetness	0.60	Hard to reclaim (rock fragments)	0.00
		Too acid	0.54			Rock fragments	0.00
		Droughty	0.86			Slope	0.37

# Soil Survey of Delaware Water Gap National Recreation Area

Table 12.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296274 Bath-----	85	Fair Low content of organic matter Too acid Droughty	0.08 0.54 0.86	Fair Slope Wetness	0.50 0.60	Poor Slope Hard to reclaim (rock fragments) Rock fragments	0.00 0.00 0.00
296275 Bath-----	90	Fair Low content of organic matter Too acid Droughty	0.02 0.54 0.95	Fair Wetness	0.60	Poor Hard to reclaim (rock fragments) Rock fragments Wetness	0.00 0.00 0.60
296276 Bath-----	90	Fair Low content of organic matter Too acid Droughty	0.02 0.54 0.95	Fair Wetness Slope	0.60 0.92	Poor Hard to reclaim (rock fragments) Rock fragments Slope	0.00 0.00 0.00
296277 Benson-----	55	Poor Depth to bedrock Droughty Low content of organic matter	0.00 0.00 0.05	Poor Depth to bedrock Cobbles	0.00 0.29	Poor Depth to bedrock Rock fragments	0.00 0.00
296278 Benson-----	60	Poor Depth to bedrock Droughty Low content of organic matter	0.00 0.00 0.05	Poor Depth to bedrock Cobbles Slope	0.00 0.29 0.92	Poor Depth to bedrock Rock fragments Slope	0.00 0.00 0.00
Rock outcrop-----	20	Not rated		Not rated		Not rated	
296279 Benson-----	60	Poor Depth to bedrock Droughty Low content of organic matter	0.00 0.00 0.05	Poor Depth to bedrock Slope Cobbles	0.00 0.00 0.29	Poor Depth to bedrock Slope Rock fragments	0.00 0.00 0.00
Rock outcrop-----	25	Not rated		Not rated		Not rated	
296280 Braceville-----	90	Fair Low content of organic matter Too acid Droughty	0.12 0.54 0.90	Fair Wetness	0.76	Fair Rock fragments Wetness Hard to reclaim (rock fragments)	0.12 0.76 0.80
296281 Braceville-----	90	Fair Low content of organic matter Too acid Droughty	0.12 0.54 0.90	Fair Wetness	0.76	Fair Rock fragments Wetness Hard to reclaim (rock fragments)	0.12 0.76 0.80

# Soil Survey of Delaware Water Gap National Recreation Area

Table 12.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296283 Buchanan-----	90	Fair Low content of organic matter Too acid	0.08 0.50	Fair Wetness	0.76	Poor Rock fragments Hard to reclaim (rock fragments) Too acid	0.00 0.08 0.59
296288 Chippewa-----	48	Fair Droughty Low content of organic matter Too acid	0.18 0.32 0.68	Poor Wetness	0.00	Poor Wetness Rock fragments Hard to reclaim (rock fragments)	0.00 0.00 0.50
Norwich-----	48	Fair Low content of organic matter Droughty Too acid	0.32 0.34 0.84	Poor Wetness	0.00	Poor Wetness Rock fragments Hard to reclaim (rock fragments)	0.00 0.00 0.50
296289 Chippewa-----	47	Fair Droughty Low content of organic matter Too acid	0.10 0.32 0.68	Poor Wetness	0.00	Poor Wetness Rock fragments Hard to reclaim (rock fragments)	0.00 0.00 0.24
Norwich-----	47	Fair Droughty Low content of organic matter Too acid	0.26 0.32 0.84	Poor Wetness Cobbles	0.00 0.99	Poor Wetness Rock fragments Hard to reclaim (rock fragments)	0.00 0.00 0.50
296295 Udorthents, cut and fill-----	90	Not rated		Not rated		Not rated	
296297 Dekalb-----	100	Poor Droughty Too acid Low content of organic matter	0.00 0.50 0.50	Poor Depth to bedrock Cobbles Slope	0.00 0.53 0.92	Poor Rock fragments Slope Too acid	0.00 0.00 0.59
296298 Dekalb-----	100	Poor Droughty Too acid Low content of organic matter	0.00 0.50 0.54	Poor Depth to bedrock Slope Cobbles	0.00 0.00 0.53	Poor Slope Rock fragments Too acid	0.00 0.00 0.59
296303 Hazleton-----	100	Fair Low content of organic matter Too acid Cobbles	0.09 0.50 0.94	Fair Cobbles Slope Depth to bedrock	0.27 0.92 0.99	Poor Hard to reclaim (rock fragments) Rock fragments Slope	0.00 0.00 0.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 12.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296304 Holly-----	100	Fair		Poor		Poor	
		Low content of organic matter	0.50	Wetness	0.00	Wetness	0.00
		Too acid	0.97			Rock fragments	0.97
296311 Lackawanna-----	40	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Too acid	0.50	Wetness	0.62	Rock fragments	0.00
						Hard to reclaim (rock fragments)	0.32
Bath-----	30	Fair		Poor		Poor	
		Low content of organic matter	0.08	Slope	0.00	Slope	0.00
		Too acid	0.54	Wetness	0.60	Hard to reclaim (rock fragments)	0.00
		Droughty	0.95			Rock fragments	0.00
296312 Lackawanna-----	80	Fair		Fair		Poor	
		Low content of organic matter	0.12	Wetness	0.62	Rock fragments	0.00
		Too acid	0.50			Hard to reclaim (rock fragments)	0.32
						Wetness	0.62
296313 Lackawanna-----	80	Fair		Fair		Poor	
		Low content of organic matter	0.12	Wetness	0.62	Rock fragments	0.00
		Too acid	0.50			Hard to reclaim (rock fragments)	0.32
						Slope	0.37
296315 Lackawanna-----	80	Fair		Fair		Poor	
		Low content of organic matter	0.12	Wetness	0.62	Rock fragments	0.00
		Too acid	0.50			Hard to reclaim (rock fragments)	0.32
						Wetness	0.62
296316 Lackawanna-----	80	Fair		Fair		Poor	
		Low content of organic matter	0.12	Wetness	0.62	Rock fragments	0.00
		Too acid	0.50	Slope	0.92	Slope	0.00
						Hard to reclaim (rock fragments)	0.32
296317 Laidig-----	100	Poor		Fair		Poor	
		Low content of organic matter	0.00	Wetness	0.89	Rock fragments	0.00
		Too acid	0.50			Hard to reclaim (rock fragments)	0.50
						Too acid	0.59
296326 Lordstown-----	85	Fair		Poor		Poor	
		Stone content	0.08	Depth to bedrock	0.00	Rock fragments	0.00
		Droughty	0.27	Stones	0.08	Depth to bedrock	0.54
		Low content of organic matter	0.50	Cobbles	0.97		



# Soil Survey of Delaware Water Gap National Recreation Area

Table 12.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296327 Lordstown-----	85	Fair		Poor		Poor	
		Stone content	0.08	Depth to bedrock	0.00	Rock fragments	0.00
		Droughty	0.27	Stones	0.08	Slope	0.00
		Low content of organic matter	0.50	Slope	0.92	Depth to bedrock	0.54
296328 Lordstown-----	40	Fair		Poor		Poor	
		Droughty	0.18	Depth to bedrock	0.00	Slope	0.00
		Low content of organic matter	0.50	Slope	0.00	Rock fragments	0.00
		Too acid	0.54			Depth to bedrock	0.54
Oquaga-----	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Too acid	0.50	Slope	0.00	Slope	0.00
		Low content of organic matter	0.50	Cobbles	0.96	Depth to bedrock	0.54
296329 Mardin-----	85	Fair		Fair		Poor	
		Low content of organic matter	0.08	Wetness	0.04	Rock fragments	0.00
		Droughty	0.28			Wetness	0.04
		Too acid	0.39			Hard to reclaim (rock fragments)	0.08
296330 Mardin-----	85	Fair		Fair		Poor	
		Low content of organic matter	0.08	Wetness	0.04	Rock fragments	0.00
		Droughty	0.28			Wetness	0.04
		Too acid	0.39			Hard to reclaim (rock fragments)	0.08
296331 Mardin-----	85	Fair		Fair		Poor	
		Droughty	0.20	Wetness	0.04	Rock fragments	0.00
		Too acid	0.32			Wetness	0.04
		Low content of organic matter	0.50			Hard to reclaim (rock fragments)	0.08
296332 Mardin-----	87	Fair		Fair		Poor	
		Droughty	0.20	Wetness	0.04	Rock fragments	0.00
		Too acid	0.32	Slope	0.92	Slope	0.00
		Low content of organic matter	0.50			Wetness	0.04
296335 Meckesville-----	100	Fair		Fair		Fair	
		Too acid	0.12	Wetness	0.99	Rock fragments	0.28
		Low content of organic matter	0.18			Slope	0.37
						Too acid	0.59
296337 Meckesville-----	100	Fair		Fair		Poor	
		Too acid	0.12	Slope	0.92	Slope	0.00
		Low content of organic matter	0.12	Wetness	0.99	Rock fragments	0.28
						Too acid	0.59

# Soil Survey of Delaware Water Gap National Recreation Area

Table 12.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296338 Morris-----	80	Fair Low content of organic matter Too acid	0.08 0.54	Poor Wetness	0.00	Poor Wetness Rock fragments Hard to reclaim (rock fragments)	0.00 0.00 0.50
296339 Morris-----	75	Fair Low content of organic matter Too acid	0.08 0.54	Poor Wetness Stones	0.00 0.96	Poor Wetness Rock fragments Hard to reclaim (rock fragments)	0.00 0.00 0.50
296340 Morris-----	80	Fair Low content of organic matter Too acid	0.08 0.54	Poor Wetness Stones	0.00 0.96	Poor Wetness Rock fragments Hard to reclaim (rock fragments)	0.00 0.00 0.50
296341 Freetown, mucky peat	100	Fair Too acid	0.50	Poor Wetness	0.00	Not rated	
296342 Paupack, mucky peat (shallow)-----	100	Fair Too acid	0.50	Poor Wetness	0.00	Not rated	
296343 Oquaga-----	50	Poor Droughty Too acid Low content of organic matter	0.00 0.50 0.50	Poor Depth to bedrock Cobbles	0.00 0.98	Poor Rock fragments Depth to bedrock Too acid	0.00 0.54 0.76
Lackawanna-----	35	Fair Low content of organic matter Too acid	0.02 0.50	Fair Wetness	0.62	Poor Rock fragments Hard to reclaim (rock fragments) Wetness	0.00 0.32 0.62
296344 Oquaga-----	55	Poor Droughty Too acid Low content of organic matter	0.00 0.50 0.50	Poor Depth to bedrock Cobbles	0.00 0.98	Poor Rock fragments Slope Depth to bedrock	0.00 0.37 0.54
Lackawanna-----	30	Fair Low content of organic matter Too acid	0.02 0.50	Fair Wetness	0.62	Poor Rock fragments Hard to reclaim (rock fragments) Slope	0.00 0.32 0.37

# Soil Survey of Delaware Water Gap National Recreation Area

Table 12.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296346							
Oquaga-----	50	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Too acid	0.50	Cobbles	0.96	Depth to bedrock	0.54
		Low content of organic matter	0.50			Too acid	0.76
Lackawanna-----	35	Fair		Fair		Poor	
		Low content of organic matter	0.02	Wetness	0.62	Rock fragments	0.00
		Too acid	0.50			Hard to reclaim (rock fragments)	0.32
						Wetness	0.62
296347							
Oquaga-----	60	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Too acid	0.50	Slope	0.92	Slope	0.00
		Low content of organic matter	0.50	Cobbles	0.96	Depth to bedrock	0.54
Lackawanna-----	30	Fair		Fair		Poor	
		Low content of organic matter	0.02	Wetness	0.62	Rock fragments	0.00
		Too acid	0.50	Slope	0.92	Slope	0.00
						Hard to reclaim (rock fragments)	0.32
296348							
Philo-----	85	Fair		Fair		Fair	
		Too acid	0.54	Wetness	0.76	Wetness	0.76
		Water erosion	0.99			Hard to reclaim (rock fragments)	0.92
						Rock fragments	0.97
296349							
Pope-----	90	Fair		Good		Fair	
		Low content of organic matter	0.01			Too acid	0.59
		Too acid	0.50				
		Water erosion	0.99				
296350							
Pope-----	90	Fair		Good		Fair	
		Low content of organic matter	0.01			Too acid	0.59
		Too acid	0.50				
		Water erosion	0.99				
296351							
Rexford, somewhat poorly drained----	40	Fair		Poor		Poor	
		Low content of organic matter	0.02	Wetness	0.00	Wetness	0.00
		Droughty	0.44			Hard to reclaim (rock fragments)	0.00
		Too acid	0.54			Rock fragments	0.12
Rexford, poorly drained-----	35	Fair		Poor		Poor	
		Low content of organic matter	0.02	Wetness	0.00	Wetness	0.00
		Droughty	0.44			Hard to reclaim (rock fragments)	0.00
		Too acid	0.54			Rock fragments	0.12

# Soil Survey of Delaware Water Gap National Recreation Area

Table 12.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296355 Sheffield-----	100	Fair		Poor		Poor	
		Low content of organic matter	0.05	Wetness	0.00	Wetness	0.00
		Too acid	0.50	Low strength	0.22		
		Water erosion	0.99				
296363 Dystrochrepts, very stony-----	85	Fair		Poor		Poor	
		Low content of organic matter	0.08	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.31	Slope	0.00	Hard to reclaim	0.00
		Too acid	0.50	Cobbles	0.57	(rock fragments)	
						Rock fragments	0.00
296369 Wayland-----	100	Fair		Poor		Poor	
		Low content of organic matter	0.46	Wetness	0.00	Wetness	0.00
		Water erosion	0.90	Low strength	0.00		
296376 Wellsboro-----	80	Fair		Fair		Poor	
		Low content of organic matter	0.08	Wetness	0.04	Rock fragments	0.00
		Too acid	0.32			Wetness	0.04
						Hard to reclaim	0.82
						(rock fragments)	
296379 Wellsboro-----	85	Fair		Fair		Poor	
		Low content of organic matter	0.08	Wetness	0.04	Rock fragments	0.00
		Too acid	0.32	Slope	0.92	Slope	0.00
						Wetness	0.04
296385 Wyoming-----	85	Fair		Good		Poor	
		Droughty	0.01			Rock fragments	0.00
		Low content of organic matter	0.08			Hard to reclaim	0.00
		Too acid	0.50			(rock fragments)	
						Too acid	0.76
296386 Wyoming-----	85	Fair		Good		Poor	
		Droughty	0.01			Rock fragments	0.00
		Low content of organic matter	0.08			Hard to reclaim	0.00
		Too acid	0.50			(rock fragments)	
						Too acid	0.76
296387 Wyoming-----	85	Fair		Good		Poor	
		Droughty	0.01			Rock fragments	0.00
		Low content of organic matter	0.08			Hard to reclaim	0.00
		Too acid	0.50			(rock fragments)	
						Slope	0.37
296388 Wyoming-----	85	Fair		Fair		Poor	
		Droughty	0.01	Slope	0.50	Rock fragments	0.00
		Low content of organic matter	0.08			Slope	0.00
		Too acid	0.50			Hard to reclaim	0.00
						(rock fragments)	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 12.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296389 Wyoming-----	100	Fair		Poor		Poor	
		Droughty	0.02	Slope	0.00	Rock fragments	0.00
		Low content of organic matter	0.05			Slope	0.00
		Too acid	0.50			Hard to reclaim (rock fragments)	0.00
296390 Water-----	100	Not rated		Not rated		Not rated	
297185 Edgemere-----	42	Fair		Poor		Poor	
		Too acid	0.50	Wetness	0.00	Wetness	0.00
		Low content of organic matter	0.50	Stones	0.68	Hard to reclaim (rock fragments)	0.24
		Droughty	0.90			Rock fragments	0.28
Shohola-----	42	Fair		Poor		Poor	
		Low content of organic matter	0.12	Wetness	0.00	Wetness	0.00
		Too acid	0.50			Hard to reclaim (rock fragments)	0.24
		Droughty	0.59			Rock fragments	0.28
297186 Edgemere-----	75	Fair		Poor		Poor	
		Too acid	0.50	Wetness	0.00	Wetness	0.00
		Low content of organic matter	0.50	Stones	0.55	Hard to reclaim (rock fragments)	0.24
		Droughty	0.90			Rock fragments	0.28
297188 Manlius-----	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Too acid	0.50	Slope	0.08	Slope	0.00
		Low content of organic matter	0.50	Cobbles	0.96	Depth to bedrock	0.54
Arnot-----	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Slope	0.08	Depth to bedrock	0.00
		Stone content	0.24	Stones	0.24	Slope	0.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
297189 Manlius-----	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Too acid	0.50	Slope	0.00	Slope	0.00
		Low content of organic matter	0.50	Cobbles	0.96	Depth to bedrock	0.54
Arnot-----	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
		Stone content	0.24	Stones	0.24	Slope	0.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 12.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
297190 Braceville-----	82	Fair Low content of organic matter Too acid	0.08 0.54	Fair Wetness	0.29	Fair Wetness Too acid	0.29 0.98
297191 Wyalusing	85	Fair Low content of organic matter Too acid Cobbles	0.08 0.84 0.99	Poor Wetness Cobbles	0.00 0.84	Poor Wetness Hard to reclaim (rock fragments) Rock fragments	0.00 0.00 0.10
297192 Pope-----	95	Fair Low content of organic matter Too acid	0.40 0.50	Good		Fair Too acid	0.59
297193 Paupack-----	90	Fair Too acid	0.50	Poor Wetness	0.00	Not rated	
297196 Freetown	94	Fair Too acid	0.50	Poor Wetness	0.00	Not rated	
297197 Manlius-----	90	Poor Droughty Too acid Low content of organic matter	0.00 0.50 0.50	Poor Depth to bedrock Cobbles	0.00 0.97	Poor Rock fragments Depth to bedrock Too acid	0.00 0.54 0.76
297198 Manlius-----	86	Poor Droughty Too acid Low content of organic matter	0.00 0.50 0.50	Poor Depth to bedrock Cobbles	0.00 0.97	Poor Rock fragments Slope Depth to bedrock	0.00 0.37 0.54
297201 Oquaga-----	75	Poor Droughty Too acid Depth to bedrock	0.00 0.50 0.71	Poor Depth to bedrock Slope Cobbles	0.00 0.08 0.76	Poor Rock fragments Slope Depth to bedrock	0.00 0.00 0.71
297203 Delaware-----	93	Fair Low content of organic matter Too acid	0.12 0.97	Good		Good	
297204 Delaware-----	82	Fair Low content of organic matter Too acid	0.12 0.97	Good		Good	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 12.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
297205 Delaware-----	80	Fair Low content of organic matter Too acid	0.12 0.97	Good		Fair Slope	0.04
297209 Philo-----	85	Fair Low content of organic matter Too acid Water erosion	0.12 0.54 0.99	Fair Wetness	0.76	Fair Hard to reclaim (rock fragments) Wetness Rock fragments	0.68 0.76 0.97
297210 Barbour-----	85	Fair Low content of organic matter Too acid Too sandy	0.02 0.54 0.98	Good		Fair Rock fragments Hard to reclaim (rock fragments) Too acid	0.12 0.50 0.98
297216 Wurtsboro-----	92	Fair Low content of organic matter Too acid	0.02 0.50	Fair Wetness	0.18	Fair Rock fragments Wetness Hard to reclaim (rock fragments)	0.03 0.18 0.50
297217 Wurtsboro-----	88	Fair Low content of organic matter Too acid	0.02 0.50	Fair Wetness	0.18	Fair Rock fragments Wetness Slope	0.03 0.18 0.37
297227 Arnot-----	88	Poor Droughty Depth to bedrock Too acid	0.00 0.00 0.50	Poor Depth to bedrock Cobbles	0.00 0.96	Poor Rock fragments Depth to bedrock Too acid	0.00 0.00 0.76
297228 Arnot-----	85	Poor Droughty Depth to bedrock Too acid	0.00 0.00 0.50	Poor Depth to bedrock Slope Cobbles	0.00 0.00 0.96	Poor Rock fragments Depth to bedrock Slope	0.00 0.00 0.00
297229 Wyoming-----	90	Fair Low content of organic matter Droughty Cobbles	0.12 0.20 0.27	Fair Cobbles	0.01	Poor Hard to reclaim (rock fragments) Rock fragments Too acid	0.00 0.00 0.76
297230 Wyoming-----	90	Fair Low content of organic matter Droughty Too acid	0.12 0.20 0.50	Fair Cobbles	0.84	Poor Hard to reclaim (rock fragments) Rock fragments Slope	0.00 0.00 0.37

# Soil Survey of Delaware Water Gap National Recreation Area

Table 12.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
297231 Wyoming-----	90	Fair		Poor		Poor	
		Low content of organic matter	0.12	Cobbles	0.00	Hard to reclaim (rock fragments)	0.00
		Cobbles	0.16	Slope	0.08	Rock fragments	0.00
		Droughty	0.20			Slope	0.00
297236 Suncook-----	91	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Wind erosion	0.00			Rock fragments	0.50
		Low content of organic matter	0.05				
297237 Mardin-----	85	Fair		Fair		Poor	
		Low content of organic matter	0.08	Wetness	0.04	Rock fragments	0.00
		Droughty	0.24			Wetness	0.04
		Too acid	0.39			Hard to reclaim (rock fragments)	0.08
297238 Mardin-----	85	Fair		Fair		Poor	
		Low content of organic matter	0.08	Wetness	0.04	Rock fragments	0.00
		Droughty	0.24			Wetness	0.04
		Too acid	0.39			Hard to reclaim (rock fragments)	0.08
297239 Mardin-----	85	Fair		Fair		Poor	
		Low content of organic matter	0.08	Wetness	0.04	Rock fragments	0.00
		Droughty	0.24	Stones	0.83	Wetness	0.04
		Too acid	0.39			Hard to reclaim (rock fragments)	0.08
297240 Mardin-----	85	Fair		Fair		Poor	
		Low content of organic matter	0.08	Wetness	0.04	Rock fragments	0.00
		Droughty	0.24	Stones	0.83	Wetness	0.04
		Too acid	0.39			Hard to reclaim (rock fragments)	0.08
297241 Unadilla-----	90	Fair		Good		Fair	
		Water erosion	0.06			Too acid	0.98
		Low content of organic matter	0.50				
		Too acid	0.54				
297242 Shohola-----	62	Fair		Poor		Poor	
		Low content of organic matter	0.12	Wetness	0.00	Wetness	0.00
		Too acid	0.50			Hard to reclaim (rock fragments)	0.24
		Droughty	0.59			Rock fragments	0.28
Edgemere-----	29	Fair		Poor		Poor	
		Too acid	0.50	Wetness	0.00	Wetness	0.00
		Low content of organic matter	0.50	Stones	0.68	Hard to reclaim (rock fragments)	0.24
		Droughty	0.90			Rock fragments	0.28



# Soil Survey of Delaware Water Gap National Recreation Area

Table 12.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
297243							
Shohola-----	62	Fair		Poor		Poor	
		Low content of organic matter	0.12	Wetness	0.00	Wetness	0.00
		Too acid	0.50			Hard to reclaim (rock fragments)	0.24
		Droughty	0.59			Rock fragments	0.28
Edgemere-----	29	Fair		Poor		Poor	
		Too acid	0.50	Wetness	0.00	Wetness	0.00
		Low content of organic matter	0.50	Stones	0.68	Hard to reclaim (rock fragments)	0.24
		Droughty	0.90			Rock fragments	0.28
297244							
Lordstown-----	40	Fair		Poor		Poor	
		Droughty	0.19	Depth to bedrock	0.00	Rock fragments	0.00
		Low content of organic matter	0.50			Depth to bedrock	0.54
		Too acid	0.54			Too acid	0.98
Swartswood-----	35	Fair		Fair		Poor	
		Low content of organic matter	0.12	Wetness	0.89	Rock fragments	0.00
		Too acid	0.50			Hard to reclaim (rock fragments)	0.18
						Too acid	0.59
297247							
Chenango-----	86	Fair		Good		Poor	
		Low content of organic matter	0.50			Hard to reclaim (rock fragments)	0.00
		Too acid	0.54			Rock fragments	0.00
		Droughty	0.57			Too acid	0.98
297248							
Chenango-----	85	Fair		Good		Poor	
		Low content of organic matter	0.50			Hard to reclaim (rock fragments)	0.00
		Too acid	0.54			Rock fragments	0.00
		Droughty	0.57			Slope	0.37
297249							
Chenango-----	90	Fair		Fair		Poor	
		Low content of organic matter	0.50	Slope	0.50	Hard to reclaim (rock fragments)	0.00
		Too acid	0.54			Slope	0.00
		Droughty	0.57			Rock fragments	0.00
297253							
Craigsville-----	50	Poor		Poor		Poor	
		Cobbles	0.00	Cobbles	0.00	Hard to reclaim (rock fragments)	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
		Too acid	0.50			Too acid	0.88
Wyoming-----	40	Fair		Good		Poor	
		Low content of organic matter	0.12			Rock fragments	0.00
		Droughty	0.20			Hard to reclaim (rock fragments)	0.00
		Too acid	0.50			Too acid	0.76

# Soil Survey of Delaware Water Gap National Recreation Area

Table 12.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
297254							
Pits, shale-----	40	Not rated		Not rated		Not rated	
Pits, gravel-----	40	Not rated		Not rated		Not rated	
298049							
Wurtsboro, extremely stony----	90	Fair		Fair		Fair	
		Low content of organic matter	0.12	Wetness	0.14	Wetness	0.14
		Too acid	0.50			Rock fragments	0.76
						Too acid	0.76
298050							
Wurtsboro, extremely stony----	60	Fair		Fair		Fair	
		Low content of organic matter	0.12	Wetness	0.14	Wetness	0.14
		Too acid	0.50			Rock fragments	0.76
						Too acid	0.76
Swartswood, extremely stony----	40	Fair		Good		Poor	
		Low content of organic matter	0.12			Rock fragments	0.00
		Too acid	0.50			Hard to reclaim	0.80
		Droughty	0.97			(rock fragments)	
						Too acid	0.88
298051							
Wurtsboro, extremely stony----	60	Fair		Fair		Fair	
		Low content of organic matter	0.12	Wetness	0.14	Wetness	0.14
		Too acid	0.50			Slope	0.37
						Rock fragments	0.76
Swartswood, extremely stony----	40	Fair		Good		Poor	
		Low content of organic matter	0.12			Rock fragments	0.00
		Too acid	0.50			Slope	0.37
		Droughty	0.97			Hard to reclaim	0.80
						(rock fragments)	
298075							
Colonie-----	80	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Wind erosion	0.00			Too acid	0.98
		Low content of organic matter	0.08				
298188							
Lackawanna, extremely stony----	85	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Too acid	0.50	Stones	0.78	Rock fragments	0.00
		Stone content	0.65			Hard to reclaim	0.32
						(rock fragments)	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 12.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
298189 Lackawanna, extremely stony----	85	Fair Low content of organic matter Too acid Stone content	0.12 0.50 0.65	Fair Stones	0.78	Poor Rock fragments Hard to reclaim (rock fragments) Slope	0.00 0.32 0.37
298221 Swartswood, extremely stony----	90	Fair Low content of organic matter Too acid Droughty	0.12 0.50 0.97	Good		Poor Rock fragments Hard to reclaim (rock fragments) Too acid	0.00 0.80 0.88
298222 Swartswood, extremely stony----	90	Fair Low content of organic matter Too acid Droughty	0.12 0.50 0.97	Good		Poor Rock fragments Slope Hard to reclaim (rock fragments)	0.00 0.37 0.80
298223 Swartswood, extremely stony----	85	Fair Low content of organic matter Too acid Droughty	0.12 0.50 0.97	Poor Slope	0.00	Poor Slope Rock fragments Hard to reclaim (rock fragments)	0.00 0.00 0.80
298255 Delaware, rarely flooded-----	80	Fair Low content of organic matter Too acid	0.03 0.54	Good		Fair Too acid	0.98
298256 Delaware, rarely flooded-----	80	Fair Low content of organic matter Too acid	0.03 0.54	Good		Fair Too acid	0.98
298257 Wallpack-----	85	Fair Low content of organic matter Too acid Water erosion	0.02 0.54 0.90	Good		Poor Hard to reclaim (rock fragments) Rock fragments Slope	0.00 0.00 0.37
298258 Wallpack-----	85	Fair Low content of organic matter Too acid Water erosion	0.02 0.54 0.90	Fair Slope	0.50	Poor Slope Hard to reclaim (rock fragments) Rock fragments	0.00 0.00 0.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 12.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
298259 Wallpack, extremely stony-----	85	Fair		Good		Fair	
		Low content of organic matter	0.02			Rock fragments	0.50
		Too acid	0.54				
298260 Wallpack, extremely stony-----	85	Fair		Good		Fair	
		Low content of organic matter	0.02			Slope	0.37
		Too acid	0.54			Rock fragments	0.50
298261 Wallpack-----	85	Fair		Good		Poor	
		Low content of organic matter	0.02			Hard to reclaim (rock fragments)	0.00
		Too acid	0.54			Rock fragments	0.00
		Water erosion	0.90				
298262 Wallpack, extremely stony-----	85	Fair		Poor Slope		Poor	
		Low content of organic matter	0.02		0.00	Slope	0.00
		Too acid	0.54			Rock fragments	0.50
							0.50
298265 Venango, extremely stony-----	90	Fair		Poor		Poor	
		Low content of organic matter	0.08	Wetness	0.00	Wetness	0.00
		Too acid	0.50	Low strength	0.00	Too clayey	0.49
		Water erosion	0.68			Rock fragments	0.50
298266 Venango, extremely stony-----	85	Fair		Poor		Poor	
		Low content of organic matter	0.08	Wetness	0.00	Wetness	0.00
		Too acid	0.50	Low strength	0.00	Slope	0.37
		Too clayey	0.83			Too clayey	0.49
298409 Swartswood, extremely stony----	90	Fair		Good		Poor	
		Low content of organic matter	0.12			Rock fragments	0.00
		Too acid	0.50			Hard to reclaim (rock fragments)	0.80
		Droughty	0.97			Too acid	0.88
298411 Swartswood, extremely stony----	90	Fair		Good		Poor	
		Low content of organic matter	0.12			Rock fragments	0.00
		Too acid	0.50			Slope	0.37
		Droughty	0.97			Hard to reclaim (rock fragments)	0.80

# Soil Survey of Delaware Water Gap National Recreation Area

Table 12.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
298413 Swartswood, extremely stony----	85	Fair Low content of organic matter Too acid Droughty	0.12 0.50 0.97	Poor Slope	0.00	Poor Slope Rock fragments Hard to reclaim (rock fragments)	0.00 0.00 0.80
318498 Hazen, very stony---	60	Poor Stone content Too sandy Low content of organic matter	0.00 0.02 0.03	Poor Stones	0.00	Poor Hard to reclaim (rock fragments) Too sandy Rock fragments	0.00 0.02 0.92
Hoosic, very stony--	35	Fair Low content of organic matter Too acid Droughty	0.03 0.32 0.58	Fair Cobbles	0.97	Poor Rock fragments Hard to reclaim (rock fragments) Too acid	0.00 0.00 0.88
318533 Hazen, very stony---	50	Poor Stone content Too sandy Low content of organic matter	0.00 0.02 0.03	Poor Stones	0.00	Poor Hard to reclaim (rock fragments) Too sandy Rock fragments	0.00 0.02 0.92
Hoosic, very stony--	40	Fair Low content of organic matter Too acid Droughty	0.03 0.32 0.58	Fair Cobbles	0.97	Poor Rock fragments Hard to reclaim (rock fragments) Too acid	0.00 0.00 0.88
319783 Catden-----	85	Fair Too acid	0.50	Poor Wetness	0.00	Poor Wetness High content of organic matter	0.00 0.00
319784 Fredon, very stony--	50	Fair Too sandy Low content of organic matter Too acid	0.02 0.03 0.74	Fair Wetness	0.02	Poor Hard to reclaim (rock fragments) Rock fragments Wetness	0.00 0.00 0.02
Halsey, very stony--	40	Poor Too sandy Low content of organic matter Too acid	0.00 0.12 0.46	Poor Wetness	0.00	Poor Wetness Too sandy Hard to reclaim (rock fragments)	0.00 0.00 0.00
543222 Andover, extremely stony-----	55	Fair Low content of organic matter Too acid	0.12 0.32	Poor Wetness	0.00	Poor Wetness Rock fragments Hard to reclaim (rock fragments)	0.00 0.03 0.68

# Soil Survey of Delaware Water Gap National Recreation Area

Table 12.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
543222 Buchanan, extremely stony-----	40	Fair Too acid Low content of organic matter	 0.12 0.12	Fair Wetness	 0.29	Poor Rock fragments Hard to reclaim (rock fragments) Wetness	 0.00 0.08  0.29
543243 Berks-----	65	Poor Droughty Low content of organic matter Too acid	 0.00 0.12 0.50	Poor Depth to bedrock Slope	 0.00 0.00	Poor Rock fragments Slope Depth to bedrock	 0.00 0.00 0.79
Weikert-----	25	Poor Droughty Depth to bedrock Too acid	 0.00 0.00 0.54	Poor Depth to bedrock Slope	 0.00 0.00	Poor Rock fragments Depth to bedrock Slope	 0.00 0.00 0.00
543246 Buchanan-----	75	Fair Low content of organic matter Too acid	 0.01 0.50	Fair Wetness	 0.29	Poor Rock fragments Hard to reclaim (rock fragments) Wetness	 0.00 0.12  0.29
543247 Buchanan, extremely stony-----	80	Fair Low content of organic matter Too acid	 0.01 0.50	Fair Wetness	 0.29	Poor Rock fragments Hard to reclaim (rock fragments) Wetness	 0.00 0.12  0.29
543257 Chippewa-----	90	Fair Droughty Low content of organic matter Too acid	 0.25 0.32 0.68	Poor Wetness	 0.00	Poor Wetness Rock fragments Hard to reclaim (rock fragments)	 0.00 0.00 0.50
543258 Chippewa-----	90	Fair Droughty Low content of organic matter Too acid	 0.25 0.32 0.68	Poor Wetness	 0.00	Poor Wetness Rock fragments Hard to reclaim (rock fragments)	 0.00 0.00 0.50
543259 Chippewa, extremely stony-----	90	Fair Droughty Low content of organic matter Too acid	 0.10 0.32 0.68	Poor Wetness	 0.00	Poor Wetness Rock fragments Hard to reclaim (rock fragments)	 0.00 0.00 0.24

# Soil Survey of Delaware Water Gap National Recreation Area

Table 12.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
543271 Delaware-----	90	Fair Low content of organic matter Too acid	0.12 0.97	Good		Good	
543276 Fluvaquents-----	85	Poor Too clayey Too acid	0.00 0.61	Poor Wetness	0.00	Poor Wetness Too clayey Rock fragments	0.00 0.00 0.88
543292 Hazleton, extremely stony-----	90	Fair Too acid Low content of organic matter Cobbles	0.12 0.12 0.96	Fair Cobbles Depth to bedrock Slope	0.39 0.92 0.92	Poor Hard to reclaim (rock fragments) Rock fragments Slope	0.00 0.00 0.00
543293 Hazleton, extremely stony-----	90	Fair Too acid Low content of organic matter Cobbles	0.12 0.12 0.94	Poor Slope Cobbles	0.00 0.39	Poor Slope Hard to reclaim (rock fragments) Rock fragments	0.00 0.00 0.00
543299 Laidig, extremely stony-----	90	Fair Low content of organic matter Too acid Droughty	0.12 0.50 0.99	Good		Poor Rock fragments Hard to reclaim (rock fragments) Too acid	0.00 0.50 0.59
543300 Laidig, extremely stony-----	90	Fair Low content of organic matter Too acid Droughty	0.12 0.50 0.99	Fair Slope	0.92	Poor Rock fragments Slope Hard to reclaim (rock fragments)	0.00 0.00 0.50
543304 Laidig-----	50	Fair Low content of organic matter Too acid Droughty	0.12 0.50 0.99	Poor Slope	0.00	Poor Slope Rock fragments Hard to reclaim (rock fragments)	0.00 0.00 0.50
Rubble land-----	40	Not rated		Not rated		Not rated	
543318 Rubble land-----	75	Poor Stone content Cobbles Low content of organic matter	0.00 0.00 0.01 0.01	Poor Cobbles Stones Slope	0.00 0.00 0.00	Poor Hard to reclaim (dense layer) Hard to reclaim (rock fragments) Rock fragments	0.00 0.00 0.00 0.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 12.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
543327 Swartswood-----	90	Fair		Fair		Poor	
		Low content of organic matter	0.12	Wetness	0.99	Rock fragments	0.00
		Too acid	0.50			Hard to reclaim (rock fragments)	0.18
		Droughty	0.50			Too acid	0.59
543328 Swartswood-----	90	Fair		Fair		Poor	
		Low content of organic matter	0.12	Wetness	0.99	Rock fragments	0.00
		Too acid	0.50			Hard to reclaim (rock fragments)	0.18
		Droughty	0.50			Slope	0.37
543330 Swartswood, extremely stony----	50	Fair		Fair		Poor	
		Too acid	0.50	Wetness	0.99	Rock fragments	0.00
		Droughty	0.50			Hard to reclaim (rock fragments)	0.18
		Low content of organic matter	0.50			Too acid	0.59
Wurtsboro, extremely stony----	30	Fair		Fair		Poor	
		Low content of organic matter	0.12	Wetness	0.53	Rock fragments	0.00
		Too acid	0.50			Hard to reclaim (rock fragments)	0.50
						Wetness	0.53
543331 Swartswood, extremely stony----	50	Fair		Fair		Poor	
		Too acid	0.50	Slope	0.92	Rock fragments	0.00
		Droughty	0.50	Wetness	0.99	Slope	0.00
		Low content of organic matter	0.50			Hard to reclaim (rock fragments)	0.18
Wurtsboro, extremely stony----	30	Fair		Fair		Poor	
		Low content of organic matter	0.12	Wetness	0.53	Rock fragments	0.00
		Too acid	0.50	Slope	0.92	Slope	0.00
						Hard to reclaim (rock fragments)	0.50
543359 Volusia-----	85	Fair		Poor		Poor	
		Droughty	0.01	Wetness	0.00	Wetness	0.00
		Low content of organic matter	0.08			Hard to reclaim (rock fragments)	0.24
		Too acid	0.68			Rock fragments	0.28
543360 Volusia, extremely stony-----	85	Fair		Poor		Poor	
		Droughty	0.03	Wetness	0.00	Wetness	0.00
		Low content of organic matter	0.08			Hard to reclaim (rock fragments)	0.24
		Too acid	0.68			Rock fragments	0.28



# Soil Survey of Delaware Water Gap National Recreation Area

Table 12.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
543374 Wurtsboro-----	90	Fair Low content of organic matter Too acid	0.12 0.50	Fair Wetness	0.53	Poor Rock fragments Hard to reclaim (rock fragments) Wetness	0.00 0.50 0.53
543375 Wurtsboro-----	90	Fair Low content of organic matter Too acid	0.12 0.50	Fair Wetness	0.53	Poor Rock fragments Slope Hard to reclaim (rock fragments)	0.00 0.37 0.50
612280 Scio-----	80	Fair Low content of organic matter Water erosion Too acid	0.08 0.37 0.74	Fair Wetness	0.32	Fair Wetness	0.32
612666 Colonie-----	80	Poor Too sandy Wind erosion Low content of organic matter	0.00 0.00 0.08	Good		Poor Too sandy Too acid	0.00 0.98
612668 Hoosic, very stony--	60	Fair Low content of organic matter Too acid Droughty	0.03 0.32 0.58	Fair Cobbles	0.97	Poor Rock fragments Hard to reclaim (rock fragments) Slope	0.00 0.00 0.37
Hazen, very stony---	30	Poor Stone content Too sandy Low content of organic matter	0.00 0.02 0.03	Poor Stones	0.00	Poor Hard to reclaim (rock fragments) Too sandy Slope	0.00 0.02 0.37
612724 Lordstown, very rocky-----	50	Fair Low content of organic matter Too acid Droughty	0.12 0.50 0.59	Poor Depth to bedrock Slope	0.00 0.00	Poor Slope Rock fragments Depth to bedrock	0.00 0.00 0.93
Wallpack, very rocky	40	Fair Low content of organic matter Too acid	0.02 0.54	Poor Slope	0.00	Poor Slope Rock fragments	0.00 0.50
612732 Atherton, very poorly drained----	60	Fair Too acid Water erosion	0.88 0.99	Poor Wetness Low strength	0.00 0.00	Poor Wetness	0.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 12.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
612732 Atherton, poorly drained-----	30	Fair Low content of organic matter Water erosion Too acid	 0.50 0.68 0.97	Poor Wetness Low strength	 0.00 0.00	Poor Wetness	 0.00
612738 Fluvaquents, occasionally flooded-----	90	Fair Low content of organic matter Too acid Water erosion	 0.12 0.84 0.90	Poor Wetness	 0.00	Poor Wetness	 0.00
612753 Wallpack, aeolian mantle, very stony-	85	Fair Low content of organic matter Too acid	 0.03 0.50	Good		Fair Slope Rock fragments Hard to reclaim (rock fragments)	 0.37 0.76 0.97
612756 Wallpack, aeolian mantle, very stony-	85	Fair Low content of organic matter Too acid	 0.03 0.50	Good		Fair Rock fragments Hard to reclaim (rock fragments) Too acid	 0.76 0.97 0.98
612757 Wallpack, aeolian mantle, very stony-	85	Fair Low content of organic matter Too acid	 0.03 0.50	Poor Slope	 0.00	Poor Slope Rock fragments Hard to reclaim (rock fragments)	 0.00 0.76 0.97
612767 Wellsboro, extremely stony----	85	Fair Low content of organic matter Too acid Water erosion	 0.02 0.50 0.99	Fair Wetness Cobbles	 0.53 0.92	Fair Hard to reclaim (rock fragments) Rock fragments Slope	 0.12 0.18 0.37
612768 Wellsboro, extremely stony----	85	Fair Low content of organic matter Too acid Water erosion	 0.02 0.50 0.99	Fair Wetness Cobbles	 0.53 0.92	Fair Hard to reclaim (rock fragments) Rock fragments Wetness	 0.12 0.18 0.53

# Soil Survey of Delaware Water Gap National Recreation Area

Table 12.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
613393 Alden, extremely stony-----	90	Fair Low content of organic matter Too acid Too clayey	 0.02 0.32 0.83	Poor Wetness Low strength	 0.00 0.00	Poor Wetness Too clayey	 0.00 0.57
613447 Unadilla-----	85	Fair Water erosion Low content of organic matter	 0.06 0.08	Good		Good	
613448 Unadilla-----	85	Fair Water erosion Low content of organic matter	 0.06 0.08	Good		Good	
614075 Wurtsboro, extremely stony----	80	Fair Low content of organic matter Too acid	 0.12 0.50	Poor Slope Wetness	 0.00 0.14	Poor Slope Wetness Rock fragments	 0.00 0.14 0.76
Swartswood, extremely stony----	20	Fair Low content of organic matter Too acid Droughty	 0.12 0.50 0.97	Poor Slope	 0.00	Poor Slope Rock fragments Hard to reclaim (rock fragments)	 0.00 0.00 0.80
620179 Arnot, very rocky---	55	Poor Droughty Depth to bedrock Low content of organic matter	 0.00 0.00 0.12	Poor Depth to bedrock	 0.00	Poor Depth to bedrock Rock fragments Too acid	 0.00 0.00 0.88
Lordstown, very rocky-----	40	Fair Low content of organic matter Too acid Droughty	 0.12 0.50 0.59	Poor Depth to bedrock	 0.00	Poor Rock fragments Depth to bedrock Too acid	 0.00 0.93 0.95
620180 Arnot-----	45	Poor Droughty Depth to bedrock Low content of organic matter	 0.00 0.00 0.12	Poor Depth to bedrock Slope	 0.00 0.00	Poor Depth to bedrock Slope Rock fragments	 0.00 0.00 0.00
Lordstown-----	40	Fair Low content of organic matter Too acid Droughty	 0.12 0.50 0.59	Poor Depth to bedrock Slope	 0.00 0.00	Poor Slope Rock fragments Depth to bedrock	 0.00 0.00 0.93

# Soil Survey of Delaware Water Gap National Recreation Area

Table 12.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
620180 Rock outcrop-----	15	Not rated		Not rated		Not rated	
620181 Arnot-----	60	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
Lordstown-----	25	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.00	Rock fragments	0.00
		Droughty	0.59			Depth to bedrock	0.93
Rock outcrop-----	15	Not rated		Not rated		Not rated	
623089 Chippewa, extremely stony-----	80	Fair		Poor		Poor	
		Droughty	0.04	Wetness	0.00	Wetness	0.00
		Low content of organic matter	0.08				
		Too acid	0.50				
623109 Farmington-----	50	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00				
		Water erosion	0.06				
Rock outcrop-----	40	Not rated		Not rated		Not rated	
624811 Galway, very rocky--	80	Fair		Poor		Poor	
		Depth to bedrock	0.10	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.17	Slope	0.00	Rock fragments	0.04
		Low content of organic matter	0.50			Depth to bedrock	0.10
624813 Lackawanna, extremely stony----	85	Fair		Fair		Poor	
		Low content of organic matter	0.12	Stones	0.78	Rock fragments	0.00
		Too acid	0.50			Hard to reclaim (rock fragments)	0.32
		Stone content	0.65			Too acid	0.98
624816 Lordstown, very rocky-----	50	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Rock fragments	0.00
		Too acid	0.50			Slope	0.37
		Droughty	0.59			Depth to bedrock	0.93
Wallpack, very rocky	35	Fair		Good		Fair	
		Low content of organic matter	0.02			Slope	0.37
		Too acid	0.54			Rock fragments	0.50

# Soil Survey of Delaware Water Gap National Recreation Area

Table 12.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
624822							
Lordstown-----	50	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.50	Rock fragments	0.00
		Droughty	0.59			Depth to bedrock	0.93
Wallpack-----	35	Fair		Fair		Poor	
		Low content of organic matter	0.02	Slope	0.50	Slope	0.00
		Too acid	0.54			Hard to reclaim (rock fragments)	0.00
		Water erosion	0.90			Rock fragments	0.00
624823							
Lordstown-----	50	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Rock fragments	0.00
		Too acid	0.50			Slope	0.37
		Droughty	0.59			Depth to bedrock	0.93
Wallpack-----	35	Fair		Good		Poor	
		Low content of organic matter	0.02			Hard to reclaim (rock fragments)	0.00
		Too acid	0.54			Rock fragments	0.00
		Water erosion	0.90			Slope	0.37
624824							
Lordstown-----	50	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Rock fragments	0.00
		Too acid	0.50			Depth to bedrock	0.93
		Droughty	0.59			Too acid	0.95
Wallpack-----	35	Fair		Good		Poor	
		Low content of organic matter	0.02			Hard to reclaim (rock fragments)	0.00
		Too acid	0.54			Rock fragments	0.00
		Water erosion	0.90				
624826							
Manlius, very rocky-	60	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.29	Slope	0.00	Rock fragments	0.00
		Low content of organic matter	0.50	Cobbles	0.00	Depth to bedrock	0.29
Nassau, very rocky--	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.50	Cobbles	0.00	Rock fragments	0.00
624827							
Nassau, very rocky--	55	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Cobbles	0.05	Rock fragments	0.00
		Cobbles	0.85				

# Soil Survey of Delaware Water Gap National Recreation Area

Table 12.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
624827 Manlius, very rocky-	44	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.46	Cobbles	0.00	Depth to bedrock	0.46
		Low content of organic matter	0.50				
624828 Nassau, very rocky--	55	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Cobbles	0.05	Rock fragments	0.00
		Cobbles	0.85			Slope	0.37
Manlius, very rocky-	44	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.46	Cobbles	0.00	Slope	0.37
		Low content of organic matter	0.50			Depth to bedrock	0.46
624829 Nassau, very rocky--	55	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00	Slope	0.00
		Cobbles	0.85	Cobbles	0.05	Rock fragments	0.00
Manlius, very rocky-	44	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.46	Cobbles	0.00	Rock fragments	0.00
		Low content of organic matter	0.50	Slope	0.00	Depth to bedrock	0.46
624832 Nassau-----	50	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.50	Cobbles	0.00	Rock fragments	0.00
Rock outcrop-----	45	Not rated		Not rated		Not rated	
624841 Oquaga-----	60	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.16	Slope	0.00	Rock fragments	0.00
		Too acid	0.50	Cobbles	0.35	Depth to bedrock	0.16
Rock outcrop-----	25	Not rated		Not rated		Not rated	
624845 Rock outcrop-----	45	Not rated		Not rated		Not rated	
Farmington-----	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00	Slope	0.00
		Water erosion	0.06				
Galway-----	20	Fair		Poor		Poor	
		Depth to bedrock	0.10	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.17	Slope	0.00	Rock fragments	0.04
		Low content of organic matter	0.50			Depth to bedrock	0.10

# Soil Survey of Delaware Water Gap National Recreation Area

Table 12.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
624846 Rock outcrop-----	40	Not rated		Not rated		Not rated	
Arnot-----	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
Rubble land-----	20	Not rated		Poor		Not rated	
				Slope	0.00		
				Cobbles	0.00		
				Stones	0.00		
626816 Udifluvents, occasionally flooded-----	90	Poor		Good		Fair	
		Wind erosion	0.00			Too sandy	0.04
		Droughty	0.02				
		Too sandy	0.04				
635458 Oquaga, very rocky--	55	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.16	Cobbles	0.35	Depth to bedrock	0.16
		Too acid	0.50			Slope	0.37
Lackawanna, very rocky-----	30	Fair		Fair		Poor	
		Low content of organic matter	0.12	Stones	0.78	Rock fragments	0.00
		Too acid	0.50			Hard to reclaim (rock fragments)	0.32
		Stone content	0.65			Slope	0.37
635459 Oquaga, very rocky--	50	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.16	Slope	0.00	Rock fragments	0.00
		Too acid	0.50	Cobbles	0.35	Depth to bedrock	0.16
Lackawanna, very rocky-----	35	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Too acid	0.50	Stones	0.78	Rock fragments	0.00
		Stone content	0.65			Hard to reclaim (rock fragments)	0.32
740953 Delaware, rarely flooded-----	80	Fair		Good		Fair	
		Low content of organic matter	0.03			Too acid	0.98
		Too acid	0.54				
740968 Nassau, very rocky--	55	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Cobbles	0.05	Rock fragments	0.00
		Cobbles	0.85			Slope	0.37

# Soil Survey of Delaware Water Gap National Recreation Area

Table 12.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
740968 Manlius, very rocky--	44	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.46	Cobbles	0.00	Slope	0.37
		Low content of organic matter	0.50			Depth to bedrock	0.46
740969 Nassau, very rocky--	55	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00	Slope	0.00
		Cobbles	0.85	Cobbles	0.05	Rock fragments	0.00
Manlius, very rocky--	44	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.46	Cobbles	0.00	Rock fragments	0.00
		Low content of organic matter	0.50	Slope	0.00	Depth to bedrock	0.46
740971 Oquaga, very rocky--	55	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.16	Cobbles	0.35	Depth to bedrock	0.16
		Too acid	0.50			Slope	0.37
Lackawanna, very rocky-----	30	Fair		Fair		Poor	
		Low content of organic matter	0.12	Stones	0.78	Rock fragments	0.00
		Too acid	0.50			Hard to reclaim (rock fragments)	0.32
		Stone content	0.65			Slope	0.37
740972 Oquaga, very rocky--	50	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.16	Slope	0.00	Rock fragments	0.00
		Too acid	0.50	Cobbles	0.35	Depth to bedrock	0.16
Lackawanna, very rocky-----	35	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Too acid	0.50	Stones	0.78	Rock fragments	0.00
		Stone content	0.65			Hard to reclaim (rock fragments)	0.32
740974 Oquaga-----	60	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.16	Slope	0.00	Rock fragments	0.00
		Too acid	0.50	Cobbles	0.35	Depth to bedrock	0.16
Rock outcrop-----	25	Not rated		Not rated		Not rated	
740975 Rock outcrop-----	40	Not rated		Not rated		Not rated	
Arnot-----	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12			Rock fragments	0.00



# Soil Survey of Delaware Water Gap National Recreation Area

Table 12.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
740975 Rubble land-----	20	Not rated		Poor Slope Cobbles Stones	0.00 0.00 0.00	Not rated	
740987 Scio-----	80	Fair Low content of organic matter Water erosion Too acid	0.08 0.37 0.74	Fair Wetness	0.32	Fair Wetness	0.32
740988 Udifluvents, occasionally flooded-----	90	Poor Wind erosion Droughty Too sandy	0.00 0.02 0.04	Good		Fair Too sandy	0.04
740991 Unadilla-----	85	Fair Water erosion Low content of organic matter	0.06 0.08	Good		Good	
740992 Unadilla-----	85	Fair Water erosion Low content of organic matter	0.06 0.08	Good		Good	
740995 Wellsboro, extremely stony----	85	Fair Low content of organic matter Too acid Water erosion	0.02 0.50 0.99	Fair Wetness Cobbles	0.53 0.92	Fair Hard to reclaim (rock fragments) Rock fragments Wetness	0.12 0.18 0.53
740996 Wellsboro, extremely stony----	85	Fair Low content of organic matter Too acid Water erosion	0.02 0.50 0.99	Fair Wetness Cobbles	0.53 0.92	Fair Hard to reclaim (rock fragments) Rock fragments Slope	0.12 0.18 0.37
741149 Lackawanna, extremely stony----	85	Fair Low content of organic matter Too acid Stone content	0.12 0.50 0.65	Fair Stones	0.78	Poor Rock fragments Hard to reclaim (rock fragments) Slope	0.00 0.32 0.37

# Soil Survey of Delaware Water Gap National Recreation Area

Table 12.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
741150 Lackawanna, extremely stony----	85	Fair Low content of organic matter Too acid Stone content	 0.12 0.50 0.65	Poor Slope Stones	 0.00 0.78	Poor Slope Rock fragments Hard to reclaim (rock fragments)	 0.00 0.00 0.32
801114 Oquaga-----	75	Poor Droughty Depth to bedrock Too acid	 0.00 0.16 0.50	Poor Depth to bedrock Cobbles	 0.00 0.35	Poor Rock fragments Depth to bedrock Too acid	 0.00 0.16 0.76
Rock outcrop-----	15	Not rated		Not rated		Not rated	
810906 Oquaga-----	75	Poor Droughty Depth to bedrock Too acid	 0.00 0.16 0.50	Poor Depth to bedrock Cobbles	 0.00 0.35	Poor Rock fragments Depth to bedrock Too acid	 0.00 0.16 0.76
Rock outcrop-----	15	Not rated		Not rated		Not rated	
1147465 Alden, extremely stony-----	90	Fair Low content of organic matter Too acid Too clayey	 0.02 0.32 0.83	Poor Wetness Low strength	 0.00 0.00	Poor Wetness Too clayey	 0.00 0.57
1147467 Arnot, very rocky---	55	Poor Droughty Depth to bedrock Low content of organic matter	 0.00 0.00 0.12	Poor Depth to bedrock	 0.00	Poor Depth to bedrock Rock fragments Too acid	 0.00 0.00 0.88
Lordstown, very rocky-----	40	Fair Low content of organic matter Too acid Droughty	 0.12 0.50 0.59	Poor Depth to bedrock	 0.00	Poor Rock fragments Depth to bedrock Too acid	 0.00 0.93 0.95
1147468 Arnot-----	45	Poor Droughty Depth to bedrock Low content of organic matter	 0.00 0.00 0.12	Poor Depth to bedrock Slope	 0.00 0.00	Poor Depth to bedrock Slope Rock fragments	 0.00 0.00 0.00
Lordstown-----	40	Fair Low content of organic matter Too acid Droughty	 0.12 0.50 0.59	Poor Depth to bedrock Slope	 0.00 0.00	Poor Slope Rock fragments Depth to bedrock	 0.00 0.00 0.93
Rock outcrop-----	15	Not rated		Not rated		Not rated	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 12.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1147469							
Arnot-----	60	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
Lordstown-----	25	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.00	Rock fragments	0.00
		Droughty	0.59			Depth to bedrock	0.93
Rock outcrop-----	15	Not rated		Not rated		Not rated	
1147470							
Atherton, very poorly drained----	60	Fair		Poor		Poor	
		Too acid	0.88	Wetness	0.00	Wetness	0.00
		Water erosion	0.99	Low strength	0.00		
Atherton, poorly drained-----	30	Fair		Poor		Poor	
		Low content of organic matter	0.50	Wetness	0.00	Wetness	0.00
		Water erosion	0.68	Low strength	0.00		
		Too acid	0.97				
1147471							
Catden	85	Fair		Poor		Poor	
		Too acid	0.50	Wetness	0.00	Wetness	0.00
						High content of organic matter	0.00
1147474							
Chippewa, extremely stony-----	80	Fair		Poor		Poor	
		Droughty	0.04	Wetness	0.00	Wetness	0.00
		Low content of organic matter	0.08				
		Too acid	0.50				
1147475							
Colonie-----	80	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Wind erosion	0.00			Too acid	0.98
		Low content of organic matter	0.08				
1147478							
Delaware, rarely flooded-----	80	Fair		Good		Fair	
		Low content of organic matter	0.03			Too acid	0.98
		Too acid	0.54				

# Soil Survey of Delaware Water Gap National Recreation Area

Table 12.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1147482 Fredon, very stony--	50	Fair		Fair		Poor	
		Too sandy	0.02	Wetness	0.02	Hard to reclaim	0.00
		Low content of organic matter	0.03			(rock fragments)	
		Too acid	0.74			Rock fragments	0.00
						Wetness	0.02
Halsey, very stony--	40	Poor		Poor		Poor	
		Too sandy	0.00	Wetness	0.00	Wetness	0.00
		Low content of organic matter	0.12			Too sandy	0.00
		Too acid	0.46			Hard to reclaim	0.00
						(rock fragments)	
1147485 Hazen, very stony---	60	Poor		Poor		Poor	
		Stone content	0.00	Stones	0.00	Hard to reclaim	0.00
		Too sandy	0.02			(rock fragments)	
		Low content of organic matter	0.03			Too sandy	0.02
						Rock fragments	0.92
Hoosic, very stony--	35	Fair		Fair		Poor	
		Low content of organic matter	0.03	Cobbles	0.97	Rock fragments	0.00
		Too acid	0.32			Hard to reclaim	0.00
		Droughty	0.58			(rock fragments)	
						Too acid	0.88
1147490 Hoosic, very stony--	60	Fair		Fair		Poor	
		Low content of organic matter	0.03	Cobbles	0.97	Rock fragments	0.00
		Too acid	0.32			Hard to reclaim	0.00
		Droughty	0.58			(rock fragments)	
						Slope	0.37
Hazen, very stony---	30	Poor		Poor		Poor	
		Stone content	0.00	Stones	0.00	Hard to reclaim	0.00
		Too sandy	0.02			(rock fragments)	
		Low content of organic matter	0.03			Too sandy	0.02
						Slope	0.37
1147491 Hoosic, very stony--	50	Fair		Poor		Poor	
		Low content of organic matter	0.03	Slope	0.00	Slope	0.00
		Too acid	0.32	Cobbles	0.97	Rock fragments	0.00
		Droughty	0.58			Hard to reclaim	0.00
						(rock fragments)	
Otisville, very stony-----	40	Poor		Poor		Poor	
		Too sandy	0.00	Slope	0.00	Slope	0.00
		Droughty	0.00			Too sandy	0.00
		Low content of organic matter	0.03			Rock fragments	0.00
1147492 Lackawanna, extremely stony----	85	Fair		Fair		Poor	
		Low content of organic matter	0.12	Stones	0.78	Rock fragments	0.00
		Too acid	0.50			Hard to reclaim	0.32
		Stone content	0.65			(rock fragments)	
						Too acid	0.98

# Soil Survey of Delaware Water Gap National Recreation Area

Table 12.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1147500 Wurtsboro, extremely stony----	90	Fair Low content of organic matter Too acid	0.12 0.50	Fair Wetness	0.14	Fair Wetness Rock fragments Too acid	0.14 0.76 0.76
1147501 Wurtsboro, extremely stony----	60	Fair Low content of organic matter Too acid	0.12 0.50	Fair Wetness	0.14	Fair Wetness Rock fragments Too acid	0.14 0.76 0.76
Swartswood, extremely stony----	40	Fair Low content of organic matter Too acid Droughty	0.12 0.50 0.97	Good		Poor Rock fragments Hard to reclaim (rock fragments) Too acid	0.00 0.80 0.88
1147502 Wurtsboro, extremely stony----	60	Fair Low content of organic matter Too acid	0.12 0.50	Fair Wetness	0.14	Fair Wetness Slope Rock fragments	0.14 0.37 0.76
Swartswood, extremely stony----	40	Fair Low content of organic matter Too acid Droughty	0.12 0.50 0.97	Good		Poor Rock fragments Slope Hard to reclaim (rock fragments)	0.00 0.37 0.80
1147527 Udorthents-----	60	Poor Too sandy Too acid Low content of organic matter	0.00 0.68 0.88	Good		Poor Too sandy	0.00
Urban land-----	40	Not rated		Not rated		Not rated	
1147532 Udorthents-----	100	Poor Too sandy Too acid Low content of organic matter	0.00 0.68 0.88	Good		Poor Too sandy	0.00
1147533 Wurtsboro, extremely stony----	80	Fair Low content of organic matter Too acid	0.12 0.50	Poor Slope Wetness	0.00 0.14	Poor Slope Wetness Rock fragments	0.00 0.14 0.76

# Soil Survey of Delaware Water Gap National Recreation Area

Table 12.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1147533 Swartswood, extremely stony----	20	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Too acid	0.50			Rock fragments	0.00
		Droughty	0.97			Hard to reclaim (rock fragments)	0.80
1948749 Arnot-----	90	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00			Depth to bedrock	0.00
		Too acid	0.50			Too acid	0.76
1948750 Arnot-----	90	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00			Depth to bedrock	0.00
		Too acid	0.50			Slope	0.37
1948751 Arnot-----	90	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Slope	0.50	Depth to bedrock	0.00
		Too acid	0.50			Slope	0.00
1948774 Conotton-----	90	Fair		Good		Poor	
		Too acid	0.68			Rock fragments	0.00
		Low content of organic matter	0.88			Hard to reclaim (rock fragments)	0.00
		Droughty	0.93				
1948775 Conotton-----	95	Fair		Good		Poor	
		Too acid	0.68			Rock fragments	0.00
		Low content of organic matter	0.88			Hard to reclaim (rock fragments)	0.00
		Droughty	0.93			Slope	0.37
1948776 Conotton-----	95	Fair		Fair		Poor	
		Too acid	0.68	Slope	0.50	Rock fragments	0.00
		Low content of organic matter	0.88			Slope	0.00
		Droughty	0.93			Hard to reclaim (rock fragments)	0.00
1948777 Conotton-----	95	Fair		Poor		Poor	
		Too acid	0.68	Slope	0.00	Rock fragments	0.00
		Low content of organic matter	0.88			Slope	0.00
		Droughty	0.93			Hard to reclaim (rock fragments)	0.00
1948797 Manlius-----	90	Fair		Poor		Poor	
		Droughty	0.01	Depth to bedrock	0.00	Rock fragments	0.00
		Too acid	0.50	Cobbles	0.97	Depth to bedrock	0.71
		Low content of organic matter	0.50			Too acid	0.76

# Soil Survey of Delaware Water Gap National Recreation Area

Table 12.--Source of Reclamation Material, Roadfill, and Topsoil--Continued

Map unit symbol and soil name	Pct. of map unit	Source of reclamation material		Roadfill source		Topsoil source	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1948802 Manlius-----	90	Fair		Poor		Poor	
		Droughty	0.01	Depth to bedrock	0.00	Rock fragments	0.00
		Too acid	0.50	Cobbles	0.97	Slope	0.37
		Low content of organic matter	0.50			Depth to bedrock	0.71
1948818 Manlius-----	90	Fair		Poor		Poor	
		Droughty	0.01	Depth to bedrock	0.00	Rock fragments	0.00
		Too acid	0.50	Slope	0.50	Slope	0.00
		Low content of organic matter	0.50	Cobbles	0.97	Depth to bedrock	0.71
1948832 Penargyl-----	90	Fair		Good		Fair	
		Low content of organic matter	0.12			Rock fragments	0.28
		Too acid	0.68				
1948846 Phelps-----	90	Fair		Fair		Poor	
		Low content of organic matter	0.12	Wetness	0.32	Hard to reclaim (rock fragments)	0.00
		Droughty	0.98			Wetness	0.32
		Water erosion	0.99			Rock fragments	0.90
1948855 Udorthents, loamy---	95	Fair		Fair		Fair	
		Too acid	0.88	Wetness	0.29	Wetness	0.29
		Water erosion	0.99			Rock fragments	0.97
1948989 Urban land-----	65	Not rated		Not rated		Not rated	
Delaware-----	25	Fair		Good		Good	
		Low content of organic matter	0.12				
		Too acid	0.97				

# Soil Survey of Delaware Water Gap National Recreation Area

Table 13.--Ponds and Embankments

[Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table]

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
290836 Hoosic, very stony--	50	Very limited Seepage Slope	1.00 1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00
Otisville, very stony-----	40	Very limited Seepage Slope	1.00 1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00
296265 Alden-----	100	Somewhat limited Seepage	0.04	Very limited Ponding Depth to saturated zone Piping	1.00 1.00 1.00	Very limited Unstable excavation walls Slow refill	1.00 0.28
296269 Fluvents, (alluvial land)-----	70	Very limited Seepage	1.00	Very limited Depth to saturated zone Piping	1.00 1.00	Very limited Unstable excavation walls	1.00
296271 Alvira-----	55	Somewhat limited Seepage Slope	0.72 0.68	Very limited Depth to saturated zone Piping	1.00 1.00	Very limited Depth to water	1.00
Watson-----	35	Somewhat limited Seepage Slope	0.72 0.68	Very limited Depth to saturated zone Piping	1.00 0.98	Very limited Depth to water	1.00
296272 Bath-----	85	Somewhat limited Seepage Slope	0.72 0.68	Somewhat limited Depth to saturated zone	0.99	Very limited Depth to water	1.00
296273 Bath-----	85	Very limited Slope Seepage	1.00 0.72	Somewhat limited Depth to saturated zone	0.99	Very limited Depth to water	1.00
296274 Bath-----	85	Very limited Slope Seepage	1.00 0.72	Somewhat limited Depth to saturated zone	0.99	Very limited Depth to water	1.00
296275 Bath-----	90	Somewhat limited Seepage Slope	0.72 0.68	Somewhat limited Depth to saturated zone	0.99	Very limited Depth to water	1.00



# Soil Survey of Delaware Water Gap National Recreation Area

Table 13.--Ponds and Embankments--Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296276 Bath-----	90	Very limited Slope Seepage	1.00 0.72	Somewhat limited Depth to saturated zone	0.99	Very limited Depth to water	1.00
296277 Benson-----	55	Very limited Depth to bedrock Slope	1.00 0.08	Very limited Thin layer Piping Large stones	1.00 1.00 0.02	Very limited Depth to water	1.00
296278 Benson-----	60	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Piping Large stones	1.00 1.00 0.02	Very limited Depth to water	1.00
Rock outcrop-----	20	Not rated		Not rated		Not rated	
296279 Benson-----	60	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Piping Large stones	1.00 1.00 0.02	Very limited Depth to water	1.00
Rock outcrop-----	25	Not rated		Not rated		Not rated	
296280 Braceville-----	90	Very limited Seepage	1.00	Somewhat limited Depth to saturated zone	0.95	Very limited Depth to water	1.00
296281 Braceville-----	90	Very limited Seepage Slope	1.00 0.68	Somewhat limited Depth to saturated zone	0.95	Very limited Depth to water	1.00
296283 Buchanan-----	90	Somewhat limited Seepage Slope	0.72 0.32	Somewhat limited Depth to saturated zone	0.95	Very limited Unstable excavation walls Slow refill Depth to saturated zone	1.00 1.00 0.02
296288 Chippewa-----	48	Not limited		Very limited Depth to saturated zone Piping	1.00 1.00	Very limited Depth to water	1.00
Norwich-----	48	Not limited		Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
296289 Chippewa-----	47	Somewhat limited Slope	0.08	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 13.--Ponds and Embankments--Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296289 Norwich-----	47	Somewhat limited Slope	0.08	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
296295 Udorthents, cut and fill-----	90	Not rated		Not rated		Not rated	
296297 Dekalb-----	100	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.81	Somewhat limited Thin layer Large stones	0.81 0.03	Very limited Depth to water	1.00
296298 Dekalb-----	100	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.81	Somewhat limited Thin layer Large stones	0.81 0.03	Very limited Depth to water	1.00
296303 Hazleton-----	100	Very limited Seepage Slope	1.00 1.00	Somewhat limited Large stones	0.07	Very limited Depth to water	1.00
296304 Holly-----	100	Very limited Seepage	1.00	Very limited Depth to saturated zone Piping	1.00 1.00	Very limited Unstable excavation walls	1.00
296311 Lackawanna-----	40	Very limited Slope Seepage	1.00 0.72	Somewhat limited Depth to saturated zone	0.99	Very limited Depth to water	1.00
Bath-----	30	Very limited Slope Seepage	1.00 0.72	Somewhat limited Depth to saturated zone	0.99	Very limited Depth to water	1.00
296312 Lackawanna-----	80	Somewhat limited Seepage Slope	0.72 0.68	Somewhat limited Depth to saturated zone	0.99	Very limited Depth to water	1.00
296313 Lackawanna-----	80	Very limited Slope Seepage	1.00 0.72	Somewhat limited Depth to saturated zone	0.99	Very limited Depth to water	1.00
296315 Lackawanna-----	80	Somewhat limited Seepage Slope	0.72 0.68	Somewhat limited Depth to saturated zone	0.99	Very limited Depth to water	1.00
296316 Lackawanna-----	80	Very limited Slope Seepage	1.00 0.72	Somewhat limited Depth to saturated zone	0.99	Very limited Depth to water	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 13.--Ponds and Embankments--Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296317 Laidig-----	100	Very limited Seepage Slope	1.00 0.08	Somewhat limited Depth to saturated zone	0.86	Very limited Depth to water	1.00
296326 Lordstown-----	85	Somewhat limited Depth to bedrock Seepage Slope	0.86 0.72 0.68	Very limited Piping Thin layer Large stones	1.00 0.86 0.10	Very limited Depth to water	1.00
296327 Lordstown-----	85	Very limited Slope Depth to bedrock Seepage	1.00 0.86 0.72	Very limited Piping Thin layer Large stones	1.00 0.86 0.10	Very limited Depth to water	1.00
296328 Lordstown-----	40	Very limited Slope Depth to bedrock Seepage	1.00 0.86 0.72	Very limited Piping Thin layer	1.00 0.86	Very limited Depth to water	1.00
Oquaga-----	35	Very limited Slope Depth to bedrock Seepage	1.00 0.86 0.72	Somewhat limited Thin layer	0.86	Very limited Depth to water	1.00
296329 Mardin-----	85	Somewhat limited Seepage Slope	0.72 0.68	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
296330 Mardin-----	85	Very limited Slope Seepage	1.00 0.72	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
296331 Mardin-----	85	Somewhat limited Seepage Slope	0.72 0.68	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
296332 Mardin-----	87	Very limited Slope Seepage	1.00 0.72	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
296335 Meckesville-----	100	Very limited Slope Seepage	1.00 0.72	Very limited Piping Depth to saturated zone	1.00 0.65	Somewhat limited Slow refill Depth to saturated zone Unstable excavation walls	0.28 0.15 0.10

Soil Survey of Delaware Water Gap National Recreation Area

Table 13.--Ponds and Embankments--Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296337 Meckesville-----	100	Very limited Slope Seepage	1.00 0.72	Very limited Piping Depth to saturated zone	1.00 0.65	Somewhat limited Slow refill Depth to saturated zone Unstable excavation walls	0.28 0.15 0.10
296338 Morris-----	80	Somewhat limited Slope	0.68	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
296339 Morris-----	75	Somewhat limited Slope	0.08	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
296340 Morris-----	80	Very limited Slope	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
296341 Freetown, mucky peat	100	Very limited Seepage	1.00	Not rated		Somewhat limited Unstable excavation walls	0.10
296342 Paupack, mucky peat (shallow)-----	100	Very limited Seepage	1.00	Very limited Ponding Depth to saturated zone Seepage	1.00 1.00 1.00	Somewhat limited Unstable excavation walls	0.50
296343 Oquaga-----	50	Somewhat limited Depth to bedrock Seepage Slope	0.86 0.72 0.68	Somewhat limited Thin layer	0.86	Very limited Depth to water	1.00
Lackawanna-----	35	Somewhat limited Seepage Slope	0.72 0.68	Somewhat limited Depth to saturated zone	0.99	Very limited Depth to water	1.00
296344 Oquaga-----	55	Very limited Slope Depth to bedrock Seepage	1.00 0.86 0.72	Somewhat limited Thin layer	0.86	Very limited Depth to water	1.00
Lackawanna-----	30	Very limited Slope Seepage	1.00 0.72	Somewhat limited Depth to saturated zone	0.99	Very limited Depth to water	1.00
296346 Oquaga-----	50	Somewhat limited Depth to bedrock Seepage Slope	0.86 0.72 0.08	Somewhat limited Thin layer	0.86	Very limited Depth to water	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 13.--Ponds and Embankments--Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296346 Lackawanna-----	35	Somewhat limited Seepage Slope	0.72 0.08	Somewhat limited Depth to saturated zone	0.99	Very limited Depth to water	1.00
296347 Oquaga-----	60	Very limited Slope Depth to bedrock Seepage	1.00 0.86 0.72	Somewhat limited Thin layer	0.86	Very limited Depth to water	1.00
Lackawanna-----	30	Very limited Slope Seepage	1.00 0.72	Somewhat limited Depth to saturated zone	0.99	Very limited Depth to water	1.00
296348 Philo-----	85	Very limited Seepage	1.00	Very limited Piping Depth to saturated zone	1.00 0.95	Very limited Unstable excavation walls Depth to saturated zone	1.00 0.02
296349 Pope-----	90	Very limited Seepage	1.00	Not limited		Very limited Depth to water	1.00
296350 Pope-----	90	Very limited Seepage	1.00	Not limited		Very limited Depth to water	1.00
296351 Rexford, somewhat poorly drained----	40	Very limited Seepage	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
Rexford, poorly drained-----	35	Very limited Seepage	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
296355 Sheffield-----	100	Somewhat limited Seepage	0.04	Very limited Ponding Depth to saturated zone Piping	1.00 1.00 0.80	Somewhat limited Slow refill Unstable excavation walls	0.28 0.10
296363 Dystrochrepts, very stony-----	85	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.46	Somewhat limited Thin layer	0.46	Very limited Depth to water	1.00
296369 Wayland-----	100	Not limited		Very limited Ponding Depth to saturated zone Piping	1.00 1.00 1.00	Very limited Unstable excavation walls Slow refill	1.00 0.46

Soil Survey of Delaware Water Gap National Recreation Area

Table 13.--Ponds and Embankments--Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
296376 Wellsboro-----	80	Somewhat limited Seepage Slope	0.72 0.68	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
296379 Wellsboro-----	85	Very limited Slope Seepage	1.00 0.72	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
296385 Wyoming-----	85	Very limited Seepage	1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00
296386 Wyoming-----	85	Very limited Seepage Slope	1.00 0.68	Very limited Seepage	1.00	Very limited Depth to water	1.00
296387 Wyoming-----	85	Very limited Seepage Slope	1.00 1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00
296388 Wyoming-----	85	Very limited Seepage Slope	1.00 1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00
296389 Wyoming-----	100	Very limited Seepage Slope	1.00 1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00
296390 Water-----	100	Not rated		Not rated		Not rated	
297185 Edgemere-----	42	Somewhat limited Seepage Slope	0.72 0.68	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Depth to water	1.00
Shohola-----	42	Very limited Slope Seepage	1.00 0.72	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
297186 Edgemere-----	75	Somewhat limited Seepage	0.72	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Depth to water	1.00
297188 Manlius-----	40	Very limited Slope Depth to bedrock Seepage	1.00 0.86 0.72	Somewhat limited Thin layer Seepage	0.86 0.07	Very limited Depth to water	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 13.--Ponds and Embankments--Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
297188							
Arnot-----	35	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Large stones	1.00 0.10	Very limited Depth to water	1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
297189							
Manlius-----	40	Very limited Slope Depth to bedrock Seepage	1.00 0.86 0.72	Somewhat limited Thin layer Seepage	0.86 0.07	Very limited Depth to water	1.00
Arnot-----	35	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Large stones	1.00 0.10	Very limited Depth to water	1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
297190							
Braceville-----	82	Very limited Seepage	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
297191							
Wyalusing-----	85	Very limited Seepage	1.00	Very limited Depth to saturated zone Seepage	1.00 0.13	Very limited Unstable excavation walls	1.00
297192							
Pope-----	95	Very limited Seepage	1.00	Not limited		Very limited Depth to water	1.00
297193							
Paupack-----	90	Very limited Seepage	1.00	Very limited Ponding Depth to saturated zone Seepage	1.00 1.00 1.00	Somewhat limited Unstable excavation walls	0.50
297196							
Freetown-----	94	Very limited Seepage	1.00	Not rated		Somewhat limited Unstable excavation walls	0.10
297197							
Manlius-----	90	Somewhat limited Depth to bedrock Seepage Slope	0.86 0.72 0.68	Somewhat limited Thin layer Seepage	0.86 0.07	Very limited Depth to water	1.00
297198							
Manlius-----	86	Very limited Slope Depth to bedrock Seepage	1.00 0.86 0.72	Somewhat limited Thin layer Seepage	0.86 0.07	Very limited Depth to water	1.00

Soil Survey of Delaware Water Gap National Recreation Area

Table 13.--Ponds and Embankments--Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
297201 Oquaga-----	75	Very limited Slope Depth to bedrock Seepage	 1.00 0.81 0.72	Somewhat limited Thin layer Large stones	 0.81 0.02	Very limited Depth to water	 1.00
297203 Delaware-----	93	Very limited Seepage	 1.00	Not limited		Very limited Depth to water	 1.00
297204 Delaware-----	82	Very limited Seepage Slope	 1.00 0.68	Not limited		Very limited Depth to water	 1.00
297205 Delaware-----	80	Very limited Seepage Slope	 1.00 1.00	Not limited		Very limited Depth to water	 1.00
297209 Philo-----	85	Very limited Seepage	 1.00	Very limited Piping Depth to saturated zone	 1.00 0.95	Very limited Unstable excavation walls Depth to saturated zone	 1.00 0.02
297210 Barbour-----	85	Very limited Seepage	 1.00	Not limited		Very limited Unstable excavation walls Depth to saturated zone	 1.00 0.96
297216 Wurtsboro-----	92	Somewhat limited Seepage Slope	 0.72 0.08	Very limited Depth to saturated zone	 1.00	Very limited Depth to water	 1.00
297217 Wurtsboro-----	88	Very limited Slope Seepage	 1.00 0.72	Very limited Depth to saturated zone	 1.00	Very limited Depth to water	 1.00
297227 Arnot-----	88	Very limited Depth to bedrock Slope	 1.00 1.00	Very limited Thin layer	 1.00	Very limited Depth to water	 1.00
297228 Arnot-----	85	Very limited Slope Depth to bedrock	 1.00 1.00	Very limited Thin layer	 1.00	Very limited Depth to water	 1.00
297229 Wyoming-----	90	Very limited Seepage Slope	 1.00 0.32	Very limited Seepage Large stones	 1.00 0.26	Very limited Depth to water	 1.00



# Soil Survey of Delaware Water Gap National Recreation Area

Table 13.--Ponds and Embankments--Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
297230 Wyoming-----	90	Very limited Seepage Slope	1.00 1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00
297231 Wyoming-----	90	Very limited Seepage Slope	1.00 1.00	Very limited Seepage Large stones	1.00 0.53	Very limited Depth to water	1.00
297236 Suncook-----	91	Very limited Seepage	1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00
297237 Mardin-----	85	Somewhat limited Seepage Slope	0.72 0.08	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
297238 Mardin-----	85	Very limited Slope Seepage	1.00 0.72	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
297239 Mardin-----	85	Somewhat limited Seepage Slope	0.72 0.08	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
297240 Mardin-----	85	Very limited Slope Seepage	1.00 0.72	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
297241 Unadilla-----	90	Somewhat limited Seepage	0.72	Very limited Piping	1.00	Very limited Depth to water	1.00
297242 Shohola-----	62	Somewhat limited Seepage Slope	0.72 0.08	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
Edgemere-----	29	Somewhat limited Seepage Slope	0.72 0.08	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Depth to water	1.00
297243 Shohola-----	62	Very limited Slope Seepage	1.00 0.72	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
Edgemere-----	29	Very limited Slope Seepage	1.00 0.72	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Depth to water	1.00

Soil Survey of Delaware Water Gap National Recreation Area

Table 13.--Ponds and Embankments--Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
297244							
Lordstown-----	40	Somewhat limited Depth to bedrock Seepage Slope	0.86 0.72 0.08	Very limited Piping Thin layer	1.00 0.86	Very limited Depth to water	1.00
Swartswood-----	35	Somewhat limited Seepage Slope	0.72 0.08	Somewhat limited Depth to saturated zone	0.86	Very limited Depth to water	1.00
297247							
Chenango-----	86	Very limited Seepage Slope	1.00 0.08	Very limited Seepage	1.00	Very limited Depth to water	1.00
297248							
Chenango-----	85	Very limited Seepage Slope	1.00 1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00
297249							
Chenango-----	90	Very limited Seepage Slope	1.00 1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00
297253							
Craigsville-----	50	Very limited Seepage	1.00	Very limited Seepage Large stones	1.00 0.99	Very limited Depth to water	1.00
Wyoming-----	40	Very limited Seepage Slope	1.00 0.08	Very limited Seepage	1.00	Very limited Depth to water	1.00
297254							
Pits, shale-----	40	Very limited Depth to bedrock Slope	1.00 1.00	Not rated		Not rated	
Pits, gravel-----	40	Not rated		Not rated		Not rated	
298049							
Wurtsboro, extremely stony----	90	Very limited Seepage Slope	1.00 0.08	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
298050							
Wurtsboro, extremely stony----	60	Very limited Seepage Slope	1.00 0.08	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
Swartswood, extremely stony----	40	Very limited Seepage Slope	1.00 0.08	Somewhat limited Seepage	0.44	Very limited Depth to water	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 13.--Ponds and Embankments--Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
298051 Wurtsboro, extremely stony----	60	Very limited Slope Seepage	1.00 1.00	Very limited Depth to saturated zone Seepage	1.00 0.37	Very limited Depth to water	1.00
Swartswood, extremely stony----	40	Very limited Slope Seepage	1.00 1.00	Somewhat limited Seepage	0.44	Very limited Depth to water	1.00
298075 Colonie-----	80	Very limited Seepage Slope	1.00 0.68	Very limited Seepage	1.00	Very limited Depth to water	1.00
298188 Lackawanna, extremely stony----	85	Very limited Slope Seepage	1.00 0.70	Not limited		Very limited Depth to water	1.00
298189 Lackawanna, extremely stony----	85	Very limited Slope Seepage	1.00 0.70	Not limited		Very limited Depth to water	1.00
298221 Swartswood, extremely stony----	90	Very limited Seepage Slope	1.00 0.08	Somewhat limited Seepage	0.44	Very limited Depth to water	1.00
298222 Swartswood, extremely stony----	90	Very limited Slope Seepage	1.00 1.00	Somewhat limited Seepage	0.44	Very limited Depth to water	1.00
298223 Swartswood, extremely stony----	85	Very limited Slope Seepage	1.00 1.00	Somewhat limited Seepage	0.44	Very limited Depth to water	1.00
298255 Delaware, rarely flooded-----	80	Very limited Seepage Slope	1.00 0.68	Very limited Piping	1.00	Very limited Depth to water	1.00
298256 Delaware, rarely flooded-----	80	Very limited Seepage	1.00	Very limited Piping	1.00	Very limited Depth to water	1.00
298257 Wallpack-----	85	Very limited Slope	1.00	Not limited		Very limited Depth to water	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 13.--Ponds and Embankments--Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
298258 Wallpack-----	85	Very limited Slope	1.00	Not limited		Very limited Depth to water	1.00
298259 Wallpack, extremely stony-----	85	Somewhat limited Slope	0.08	Somewhat limited Piping	0.96	Very limited Depth to water	1.00
298260 Wallpack, extremely stony-----	85	Very limited Slope	1.00	Somewhat limited Piping	0.96	Very limited Depth to water	1.00
298261 Wallpack-----	85	Somewhat limited Slope	0.08	Not limited		Very limited Depth to water	1.00
298262 Wallpack, extremely stony-----	85	Very limited Slope	1.00	Somewhat limited Piping	0.96	Very limited Depth to water	1.00
298265 Venango, extremely stony-----	90	Somewhat limited Slope	0.08	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
298266 Venango, extremely stony-----	85	Very limited Slope	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
298409 Swartswood, extremely stony----	90	Very limited Seepage Slope	1.00 0.08	Somewhat limited Seepage	0.44	Very limited Depth to water	1.00
298411 Swartswood, extremely stony----	90	Very limited Slope Seepage	1.00 1.00	Somewhat limited Seepage	0.44	Very limited Depth to water	1.00
298413 Swartswood, extremely stony----	85	Very limited Slope Seepage	1.00 1.00	Somewhat limited Seepage	0.44	Very limited Depth to water	1.00
318498 Hazen, very stony----	60	Very limited Seepage Slope	1.00 0.68	Very limited Seepage	1.00	Very limited Depth to water	1.00
Hoosic, very stony--	35	Very limited Seepage Slope	1.00 0.68	Very limited Seepage	1.00	Very limited Depth to water	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 13.--Ponds and Embankments--Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
318533 Hazen, very stony---	50	Very limited Seepage	1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00
Hoosic, very stony--	40	Very limited Seepage	1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00
319783 Catden-----	85	Somewhat limited Seepage	0.70	Very limited Organic matter content Ponding Depth to saturated zone Seepage Hard to pack	1.00 1.00 1.00 1.00 1.00	Somewhat limited Unstable excavation walls	0.10
319784 Fredon, very stony--	50	Very limited Seepage	1.00	Very limited Depth to saturated zone Seepage	1.00 1.00	Very limited Unstable excavation walls	1.00
Halsey, very stony--	40	Very limited Seepage	1.00	Very limited Ponding Depth to saturated zone Seepage	1.00 1.00 1.00	Very limited Unstable excavation walls	1.00
543222 Andover, extremely stony-----	55	Somewhat limited Slope Seepage	0.08 0.02	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
Buchanan, extremely stony-----	40	Somewhat limited Seepage Slope	0.72 0.08	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
543243 Berks-----	65	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.77	Somewhat limited Thin layer	0.77	Very limited Depth to water	1.00
Weikert-----	25	Very limited Slope Depth to bedrock Seepage	1.00 1.00 1.00	Very limited Seepage Thin layer	1.00 1.00	Very limited Depth to water	1.00
543246 Buchanan-----	75	Somewhat limited Seepage Slope	0.72 0.68	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
543247 Buchanan, extremely stony-----	80	Somewhat limited Seepage Slope	0.72 0.08	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 13.--Ponds and Embankments--Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
543257 Chippewa-----	90	Not limited		Very limited Depth to saturated zone Piping	1.00 1.00	Very limited Depth to water	1.00
543258 Chippewa-----	90	Somewhat limited Slope	0.32	Very limited Depth to saturated zone Piping	1.00 1.00	Very limited Depth to water	1.00
543259 Chippewa, extremely stony-----	90	Somewhat limited Slope	0.08	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
543271 Delaware-----	90	Very limited Seepage	1.00	Not limited		Very limited Depth to water	1.00
543276 Fluvaquents-----	85	Somewhat limited Seepage	0.02	Very limited Depth to saturated zone	1.00	Somewhat limited Unstable excavation walls	0.10
543292 Hazleton, extremely stony-----	90	Very limited Seepage Slope Depth to bedrock	1.00 1.00 0.02	Somewhat limited Large stones Thin layer	0.10 0.02	Very limited Depth to water	1.00
543293 Hazleton, extremely stony-----	90	Very limited Seepage Slope	1.00 1.00	Somewhat limited Large stones	0.10	Very limited Depth to water	1.00
543299 Laidig, extremely stony-----	90	Very limited Seepage Slope	1.00 0.08	Somewhat limited Depth to saturated zone	0.24	Very limited Unstable excavation walls Slow refill Depth to saturated zone	1.00 0.98 0.38
543300 Laidig, extremely stony-----	90	Very limited Slope Seepage	1.00 1.00	Somewhat limited Depth to saturated zone	0.24	Very limited Unstable excavation walls Slow refill Depth to saturated zone	1.00 0.98 0.38

# Soil Survey of Delaware Water Gap National Recreation Area

Table 13.--Ponds and Embankments--Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
543304 Laidig-----	50	Very limited Slope Seepage	1.00 1.00	Somewhat limited Depth to saturated zone	0.24	Very limited Unstable excavation walls Slow refill Depth to saturated zone	1.00 0.98 0.38
Rubble land-----	40	Very limited Seepage Slope	1.00 1.00	Very limited Large stones Seepage	1.00 1.00	Very limited Depth to water	1.00
543318 Rubble land-----	75	Very limited Seepage Slope	1.00 1.00	Very limited Large stones Seepage	1.00 1.00	Very limited Depth to water	1.00
543327 Swartswood-----	90	Somewhat limited Seepage Slope	0.72 0.68	Somewhat limited Depth to saturated zone	0.62	Very limited Depth to water	1.00
543328 Swartswood-----	90	Very limited Slope Seepage	1.00 0.72	Somewhat limited Depth to saturated zone	0.62	Very limited Depth to water	1.00
543330 Swartswood, extremely stony----	50	Somewhat limited Seepage Slope	0.72 0.08	Somewhat limited Depth to saturated zone	0.62	Very limited Depth to water	1.00
Wurtsboro, extremely stony----	30	Somewhat limited Seepage Slope	0.72 0.08	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
543331 Swartswood, extremely stony----	50	Very limited Slope Seepage	1.00 0.72	Somewhat limited Depth to saturated zone	0.62	Very limited Depth to water	1.00
Wurtsboro, extremely stony----	30	Very limited Slope Seepage	1.00 0.72	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
543359 Volusia-----	85	Somewhat limited Slope	0.32	Very limited Depth to saturated zone Piping	1.00 1.00	Somewhat limited Slow refill Unstable excavation walls	0.28 0.10
543360 Volusia, extremely stony-----	85	Somewhat limited Slope	0.08	Very limited Depth to saturated zone Piping	1.00 1.00	Somewhat limited Slow refill Unstable excavation walls	0.28 0.10

# Soil Survey of Delaware Water Gap National Recreation Area

Table 13.--Ponds and Embankments--Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
543374 Wurtsboro-----	90	Somewhat limited Seepage Slope	0.72 0.68	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
543375 Wurtsboro-----	90	Very limited Slope Seepage	1.00 0.72	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
612280 Scio-----	80	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Piping	1.00 1.00	Somewhat limited Slow refill Unstable excavation walls	0.28 0.10
612666 Colonie-----	80	Very limited Seepage	1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00
612668 Hoosic, very stony--	60	Very limited Seepage Slope	1.00 1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00
Hazen, very stony---	30	Very limited Seepage Slope	1.00 1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00
612724 Lordstown, very rocky-----	50	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.66	Somewhat limited Thin layer Seepage	0.66 0.36	Very limited Depth to water	1.00
Wallpack, very rocky	40	Very limited Slope	1.00	Somewhat limited Piping	0.96	Very limited Depth to water	1.00
612732 Atherton, very poorly drained-----	60	Very limited Seepage	1.00	Very limited Ponding Depth to saturated zone Piping	1.00 1.00 0.87	Somewhat limited Unstable excavation walls	0.10
Atherton, poorly drained-----	30	Somewhat limited Seepage	0.70	Very limited Depth to saturated zone Piping	1.00 0.34	Somewhat limited Slow refill Unstable excavation walls	0.30 0.10
612738 Fluvaquents, occasionally flooded-----	90	Very limited Seepage	1.00	Very limited Depth to saturated zone Piping	1.00 1.00	Somewhat limited Unstable excavation walls	0.10



# Soil Survey of Delaware Water Gap National Recreation Area

Table 13.--Ponds and Embankments--Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
612753 Wallpack, aeolian mantle, very stony-	85	Very limited Slope Seepage	1.00 0.70	Not limited		Very limited Depth to water	1.00
612756 Wallpack, aeolian mantle, very stony-	85	Somewhat limited Seepage Slope	0.70 0.08	Not limited		Very limited Depth to water	1.00
612757 Wallpack, aeolian mantle, very stony-	85	Very limited Slope Seepage	1.00 0.70	Not limited		Very limited Depth to water	1.00
612767 Wellsboro, extremely stony----	85	Very limited Slope Seepage	1.00 0.70	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
612768 Wellsboro, extremely stony----	85	Somewhat limited Seepage Slope	0.70 0.08	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
613393 Alden, extremely stony-----	90	Somewhat limited Seepage	0.03	Very limited Ponding Depth to saturated zone Piping	1.00 1.00 0.20	Somewhat limited Unstable excavation walls	0.10
613447 Unadilla-----	85	Very limited Seepage	1.00	Very limited Piping	1.00	Very limited Depth to water	1.00
613448 Unadilla-----	85	Very limited Seepage Slope	1.00 0.68	Very limited Piping	1.00	Very limited Depth to water	1.00
614075 Wurtsboro, extremely stony----	80	Very limited Slope Seepage	1.00 1.00	Very limited Depth to saturated zone Seepage	1.00 0.37	Very limited Depth to water	1.00
Swartswood, extremely stony----	20	Very limited Slope Seepage	1.00 1.00	Somewhat limited Seepage	0.44	Very limited Depth to water	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 13.--Ponds and Embankments--Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
620179							
Arnot, very rocky---	55	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Seepage Thin layer	1.00 1.00	Very limited Depth to water	1.00
Lordstown, very rocky-----	40	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.66	Somewhat limited Thin layer Seepage	0.66 0.36	Very limited Depth to water	1.00
620180							
Arnot-----	45	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Seepage Thin layer	1.00 1.00	Very limited Depth to water	1.00
Lordstown-----	40	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.66	Somewhat limited Thin layer Seepage	0.66 0.36	Very limited Depth to water	1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
620181							
Arnot-----	60	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Seepage Thin layer	1.00 1.00	Very limited Depth to water	1.00
Lordstown-----	25	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.66	Somewhat limited Thin layer Seepage	0.66 0.36	Very limited Depth to water	1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
623089							
Chippewa, extremely stony-----	80	Not limited		Very limited Ponding Depth to saturated zone Piping	1.00 1.00 0.96	Very limited Depth to water	1.00
623109							
Farmington-----	50	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Thin layer Piping	1.00 1.00	Very limited Depth to water	1.00
Rock outcrop-----	40	Not rated		Not rated		Not rated	
624811							
Galway, very rocky--	80	Very limited Slope Depth to bedrock Seepage	1.00 0.98 0.70	Somewhat limited Thin layer	0.98	Very limited Depth to water	1.00
624813							
Lackawanna, extremely stony----	85	Somewhat limited Seepage Slope	0.70 0.08	Not limited		Very limited Depth to water	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 13.--Ponds and Embankments--Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
624816 Lordstown, very rocky-----	50	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.66	Somewhat limited Thin layer Seepage	0.66 0.36	Very limited Depth to water	1.00
Wallpack, very rocky	35	Very limited Slope	1.00	Somewhat limited Piping	0.96	Very limited Depth to water	1.00
624822 Lordstown-----	50	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.66	Somewhat limited Thin layer Seepage	0.66 0.36	Very limited Depth to water	1.00
Wallpack-----	35	Very limited Slope	1.00	Not limited		Very limited Depth to water	1.00
624823 Lordstown-----	50	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.66	Somewhat limited Thin layer Seepage	0.66 0.36	Very limited Depth to water	1.00
Wallpack-----	35	Very limited Slope	1.00	Not limited		Very limited Depth to water	1.00
624824 Lordstown-----	50	Somewhat limited Seepage Depth to bedrock Slope	0.70 0.66 0.08	Somewhat limited Thin layer Seepage	0.66 0.36	Very limited Depth to water	1.00
Wallpack-----	35	Somewhat limited Slope	0.08	Not limited		Very limited Depth to water	1.00
624826 Manlius, very rocky-	60	Very limited Slope Seepage Depth to bedrock	1.00 1.00 0.93	Somewhat limited Thin layer Large stones	0.93 0.42	Very limited Depth to water	1.00
Nassau, very rocky--	25	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Large stones Seepage	1.00 0.39 0.20	Very limited Depth to water	1.00
624827 Nassau, very rocky--	55	Very limited Depth to bedrock Slope	1.00 0.08	Very limited Thin layer Seepage Large stones	1.00 0.20 0.15	Very limited Depth to water	1.00
Manlius, very rocky-	44	Very limited Seepage Depth to bedrock Slope	1.00 0.88 0.08	Somewhat limited Thin layer Large stones	0.88 0.33	Very limited Depth to water	1.00

Soil Survey of Delaware Water Gap National Recreation Area

Table 13.--Ponds and Embankments--Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
624828							
Nassau, very rocky--	55	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	1.00	Seepage	0.20		
				Large stones	0.15		
Manlius, very rocky-	44	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.88	Depth to water	1.00
		Seepage	1.00	Large stones	0.33		
		Depth to bedrock	0.88				
624829							
Nassau, very rocky--	55	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	1.00	Seepage	0.20		
				Large stones	0.15		
Manlius, very rocky-	44	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.88	Depth to water	1.00
		Seepage	1.00	Large stones	0.33		
		Depth to bedrock	0.88				
624832							
Nassau-----	50	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	1.00	Large stones	0.39		
				Seepage	0.20		
Rock outcrop-----	45	Not rated		Not rated		Not rated	
624841							
Oquaga-----	60	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.96	Depth to water	1.00
		Depth to bedrock	0.96	Large stones	0.01		
		Seepage	0.70				
Rock outcrop-----	25	Not rated		Not rated		Not rated	
624845							
Rock outcrop-----	45	Not rated		Not rated		Not rated	
Farmington-----	35	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	1.00	Piping	1.00		
Galway-----	20	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.98	Depth to water	1.00
		Depth to bedrock	0.98				
		Seepage	0.70				
624846							
Rock outcrop-----	40	Not rated		Not rated		Not rated	
Arnot-----	30	Very limited		Very limited		Very limited	
		Slope	1.00	Seepage	1.00	Depth to water	1.00
		Depth to bedrock	1.00	Thin layer	1.00		
Rubble land-----	20	Very limited		Not rated		Very limited	
		Seepage	1.00			Depth to water	1.00
		Slope	1.00				

# Soil Survey of Delaware Water Gap National Recreation Area

Table 13.--Ponds and Embankments--Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
626816 Udifluvents, occasionally flooded-----	90	Very limited Seepage	1.00	Somewhat limited Depth to saturated zone Seepage	0.18 0.08	Very limited Unstable excavation walls Depth to saturated zone	1.00 0.44
635458 Oquaga, very rocky--	55	Very limited Slope Depth to bedrock Seepage	1.00 0.96 0.70	Somewhat limited Thin layer Large stones	0.96 0.01	Very limited Depth to water	1.00
Lackawanna, very rocky-----	30	Very limited Slope Seepage	1.00 0.70	Not limited		Very limited Depth to water	1.00
635459 Oquaga, very rocky--	50	Very limited Slope Depth to bedrock Seepage	1.00 0.96 0.70	Somewhat limited Thin layer Large stones	0.96 0.01	Very limited Depth to water	1.00
Lackawanna, very rocky-----	35	Very limited Slope Seepage	1.00 0.70	Not limited		Very limited Depth to water	1.00
740953 Delaware, rarely flooded-----	80	Very limited Seepage	1.00	Very limited Piping	1.00	Very limited Depth to water	1.00
740968 Nassau, very rocky--	55	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Seepage Large stones	1.00 0.20 0.15	Very limited Depth to water	1.00
Manlius, very rocky-	44	Very limited Slope Seepage Depth to bedrock	1.00 1.00 0.88	Somewhat limited Thin layer Large stones	0.88 0.33	Very limited Depth to water	1.00
740969 Nassau, very rocky--	55	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Thin layer Seepage Large stones	1.00 0.20 0.15	Very limited Depth to water	1.00
Manlius, very rocky-	44	Very limited Slope Seepage Depth to bedrock	1.00 1.00 0.88	Somewhat limited Thin layer Large stones	0.88 0.33	Very limited Depth to water	1.00

Soil Survey of Delaware Water Gap National Recreation Area

Table 13.--Ponds and Embankments--Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
740971 Oquaga, very rocky--	55	Very limited Slope Depth to bedrock Seepage	1.00 0.96 0.70	Somewhat limited Thin layer Large stones	0.96 0.01	Very limited Depth to water	1.00
Lackawanna, very rocky-----	30	Very limited Slope Seepage	1.00 0.70	Not limited		Very limited Depth to water	1.00
740972 Oquaga, very rocky--	50	Very limited Slope Depth to bedrock Seepage	1.00 0.96 0.70	Somewhat limited Thin layer Large stones	0.96 0.01	Very limited Depth to water	1.00
Lackawanna, very rocky-----	35	Very limited Slope Seepage	1.00 0.70	Not limited		Very limited Depth to water	1.00
740974 Oquaga-----	60	Very limited Slope Depth to bedrock Seepage	1.00 0.96 0.70	Somewhat limited Thin layer Large stones	0.96 0.01	Very limited Depth to water	1.00
Rock outcrop-----	25	Not rated		Not rated		Not rated	
740975 Rock outcrop-----	40	Not rated		Not rated		Not rated	
Arnot-----	30	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Seepage Thin layer	1.00 1.00	Very limited Depth to water	1.00
Rubble land-----	20	Very limited Seepage Slope	1.00 1.00	Not rated		Very limited Depth to water	1.00
740987 Scio-----	80	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Piping	1.00 1.00	Somewhat limited Slow refill Unstable excavation walls	0.28 0.10
740988 Udifluvents, occasionally flooded-----	90	Very limited Seepage	1.00	Somewhat limited Depth to saturated zone Seepage	0.18 0.08	Very limited Unstable excavation walls Depth to saturated zone	1.00 0.44
740991 Unadilla-----	85	Very limited Seepage	1.00	Very limited Piping	1.00	Very limited Depth to water	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 13.--Ponds and Embankments--Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
740992 Unadilla-----	85	Very limited Seepage Slope	1.00 0.68	Very limited Piping	1.00	Very limited Depth to water	1.00
740995 Wellsboro, extremely stony----	85	Somewhat limited Seepage Slope	0.70 0.08	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
740996 Wellsboro, extremely stony----	85	Very limited Slope Seepage	1.00 0.70	Very limited Depth to saturated zone	1.00	Very limited Depth to water	1.00
741149 Lackawanna, extremely stony----	85	Very limited Slope Seepage	1.00 0.70	Not limited		Very limited Depth to water	1.00
741150 Lackawanna, extremely stony----	85	Very limited Slope Seepage	1.00 0.70	Not limited		Very limited Depth to water	1.00
801114 Oquaga-----	75	Very limited Slope Depth to bedrock Seepage	1.00 0.96 0.70	Somewhat limited Thin layer Large stones	0.96 0.01	Very limited Depth to water	1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
810906 Oquaga-----	75	Very limited Slope Depth to bedrock Seepage	1.00 0.96 0.70	Somewhat limited Thin layer Large stones	0.96 0.01	Very limited Depth to water	1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
1147465 Alden, extremely stony-----	90	Somewhat limited Seepage	0.03	Very limited Ponding Depth to saturated zone Piping	1.00 1.00 0.20	Somewhat limited Unstable excavation walls	0.10
1147467 Arnot, very rocky---	55	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Seepage Thin layer	1.00 1.00	Very limited Depth to water	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 13.--Ponds and Embankments--Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1147467 Lordstown, very rocky-----	40	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.66	Somewhat limited Thin layer Seepage	0.66 0.36	Very limited Depth to water	1.00
1147468 Arnot-----	45	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Seepage Thin layer	1.00 1.00	Very limited Depth to water	1.00
Lordstown-----	40	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.66	Somewhat limited Thin layer Seepage	0.66 0.36	Very limited Depth to water	1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
1147469 Arnot-----	60	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Seepage Thin layer	1.00 1.00	Very limited Depth to water	1.00
Lordstown-----	25	Very limited Slope Seepage Depth to bedrock	1.00 0.70 0.66	Somewhat limited Thin layer Seepage	0.66 0.36	Very limited Depth to water	1.00
Rock outcrop-----	15	Not rated		Not rated		Not rated	
1147470 Atherton, very poorly drained----	60	Very limited Seepage	1.00	Very limited Ponding Depth to saturated zone Piping	1.00 1.00 0.87	Somewhat limited Unstable excavation walls	0.10
Atherton, poorly drained-----	30	Somewhat limited Seepage	0.70	Very limited Depth to saturated zone Piping	1.00 0.34	Somewhat limited Slow refill Unstable excavation walls	0.30 0.10
1147471 Catden-----	85	Somewhat limited Seepage	0.70	Very limited Organic matter content Ponding Depth to saturated zone Seepage Hard to pack	1.00 1.00 1.00 1.00 1.00	Somewhat limited Unstable excavation walls	0.10



# Soil Survey of Delaware Water Gap National Recreation Area

Table 13.--Ponds and Embankments--Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1147474 Chippewa, extremely stony-----	80	Not limited		Very limited Ponding Depth to saturated zone Piping	1.00 1.00 0.96	Very limited Depth to water	1.00
1147475 Colonie-----	80	Very limited Seepage	1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00
1147478 Delaware, rarely flooded-----	80	Very limited Seepage Slope	1.00 0.68	Very limited Piping	1.00	Very limited Depth to water	1.00
1147482 Fredon, very stony--	50	Very limited Seepage	1.00	Very limited Depth to saturated zone Seepage	1.00 1.00	Very limited Unstable excavation walls	1.00
Halsey, very stony--	40	Very limited Seepage	1.00	Very limited Ponding Depth to saturated zone Seepage	1.00 1.00 1.00	Very limited Unstable excavation walls	1.00
1147485 Hazen, very stony---	60	Very limited Seepage Slope	1.00 0.68	Very limited Seepage	1.00	Very limited Depth to water	1.00
Hoosic, very stony--	35	Very limited Seepage Slope	1.00 0.68	Very limited Seepage	1.00	Very limited Depth to water	1.00
1147490 Hoosic, very stony--	60	Very limited Seepage Slope	1.00 1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00
Hazen, very stony---	30	Very limited Seepage Slope	1.00 1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00
1147491 Hoosic, very stony--	50	Very limited Seepage Slope	1.00 1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00
Otisville, very stony-----	40	Very limited Seepage Slope	1.00 1.00	Very limited Seepage	1.00	Very limited Depth to water	1.00

Soil Survey of Delaware Water Gap National Recreation Area

Table 13.--Ponds and Embankments--Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1147492 Lackawanna, extremely stony----	85	Somewhat limited Seepage Slope	0.70 0.08	Not limited		Very limited Depth to water	1.00
1147500 Wurtsboro, extremely stony----	90	Very limited Seepage Slope	1.00 0.08	Very limited Depth to saturated zone Seepage	1.00 0.37	Very limited Depth to water	1.00
1147501 Wurtsboro, extremely stony----	60	Very limited Seepage Slope	1.00 0.08	Very limited Depth to saturated zone Seepage	1.00 0.37	Very limited Depth to water	1.00
Swartswood, extremely stony----	40	Very limited Seepage Slope	1.00 0.08	Somewhat limited Seepage	0.44	Very limited Depth to water	1.00
1147502 Wurtsboro, extremely stony----	60	Very limited Slope Seepage	1.00 1.00	Very limited Depth to saturated zone Seepage	1.00 0.37	Very limited Depth to water	1.00
Swartswood, extremely stony----	40	Very limited Slope Seepage	1.00 1.00	Somewhat limited Seepage	0.44	Very limited Depth to water	1.00
1147527 Udorthents-----	60	Very limited Seepage Slope	1.00 0.08	Somewhat limited Seepage	0.58	Very limited Depth to water	1.00
Urban land-----	40	Not rated		Not rated		Not rated	
1147532 Udorthents-----	100	Very limited Seepage Slope	1.00 0.08	Somewhat limited Seepage	0.58	Very limited Depth to water	1.00
1147533 Wurtsboro, extremely stony----	80	Very limited Slope Seepage	1.00 1.00	Very limited Depth to saturated zone Seepage	1.00 0.37	Very limited Depth to water	1.00
Swartswood, extremely stony----	20	Very limited Slope Seepage	1.00 1.00	Somewhat limited Seepage	0.44	Very limited Depth to water	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 13.--Ponds and Embankments--Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1948749 Arnot-----	90	Very limited Depth to bedrock Slope Seepage	1.00 0.68 0.54	Very limited Thin layer	1.00	Very limited Depth to water	1.00
1948750 Arnot-----	90	Very limited Slope Depth to bedrock Seepage	1.00 1.00 0.54	Very limited Thin layer	1.00	Very limited Depth to water	1.00
1948751 Arnot-----	90	Very limited Slope Depth to bedrock Seepage	1.00 1.00 0.54	Very limited Thin layer	1.00	Very limited Depth to water	1.00
1948774 Conotton-----	90	Very limited Seepage Slope	1.00 0.68	Somewhat limited Seepage	0.86	Very limited Depth to water	1.00
1948775 Conotton-----	95	Very limited Seepage Slope	1.00 1.00	Somewhat limited Seepage	0.86	Very limited Depth to water	1.00
1948776 Conotton-----	95	Very limited Seepage Slope	1.00 1.00	Somewhat limited Seepage	0.86	Very limited Depth to water	1.00
1948777 Conotton-----	95	Very limited Seepage Slope	1.00 1.00	Somewhat limited Seepage	0.86	Very limited Depth to water	1.00
1948797 Manlius-----	90	Somewhat limited Depth to bedrock Seepage Slope	0.81 0.72 0.68	Somewhat limited Thin layer Seepage	0.81 0.09	Very limited Depth to water	1.00
1948802 Manlius-----	90	Very limited Slope Depth to bedrock Seepage	1.00 0.81 0.72	Somewhat limited Thin layer Seepage	0.81 0.09	Very limited Depth to water	1.00
1948818 Manlius-----	90	Very limited Slope Depth to bedrock Seepage	1.00 0.81 0.72	Somewhat limited Thin layer Seepage	0.81 0.09	Very limited Depth to water	1.00
1948832 Penargyl-----	90	Somewhat limited Seepage Slope	0.72 0.68	Not limited		Very limited Depth to water	1.00

# Soil Survey of Delaware Water Gap National Recreation Area

Table 13.--Ponds and Embankments--Continued

Map unit symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1948846 Phelps-----	90	Very limited Seepage Slope	1.00 0.32	Very limited Depth to saturated zone Seepage	1.00 1.00	Very limited Unstable excavation walls	1.00
1948855 Udorthents, loamy---	95	Very limited Seepage Slope	1.00 0.08	Very limited Depth to saturated zone Piping	1.00 1.00	Very limited Unstable excavation walls	1.00
1948989 Urban land-----	65	Not rated		Not rated		Not rated	
Delaware-----	25	Very limited Seepage Slope	1.00 0.08	Not limited		Very limited Depth to water	1.00

Table 14.--Engineering Properties

[Absence of an entry indicates that data were not estimated]

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pas- sieve number		
			Unified	AASHTO	>10 in	3-10 in	4	10	40
290836 Hoosic, very stony-----	<i>In</i>				<i>Pct</i>	<i>Pct</i>			
	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100
	1-9	Gravelly loam	ML, GC, GC-GM	A-6, A-4, A-2-4	0	0	57-97	45-97	37-87
	9-21	Loam, sandy loam, very gravelly coarse sandy loam	SC, GP, GM	A-6, A-1-a	0	0-21	38-85	7-85	4-61
	21-27	Sand, coarse sand, extremely gravelly loamy coarse sand, loamy sand	SC-SM, GP, GP-GM	A-2-4, A-1-b, A-1-a	0	0-51	41-85	6-78	3-54
	27-37	Loamy sand, sand, extremely gravelly coarse sand, loamy coarse sand	SC-SM, GP	A-1-b, A-1-a	0-14	0-51	37-85	6-78	2-48
	37-49	Loamy sand, sand, extremely gravelly coarse sand, loamy coarse sand	SC-SM, GP, SP	A-1-b, A-1-a	0	0-51	41-85	6-78	2-48
	49-60	Loamy sand, sand, extremely gravelly coarse sand, loamy coarse sand	GP, SC-SM, SW	A-1-b, A-1-a	0-14	0-51	41-85	6-78	2-48

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage passing sieve number			
			Unified	AASHTO	>10	3-10	4	10	40		
					in	in					
290836 Otisville, very stony-----	In				Pct	Pct					
	0-1	Slightly decomposed plant material	PT	A-8			0	0	100	100	100
	1-2	Gravelly sandy loam	SC-SM, SM	A-2-4, A-1-b			0	0	64-92	51-84	37-66
	2-7	Sand, loamy fine sand, coarse sand, very gravelly loamy sand, loamy coarse sand	SM, SP-SM, SW-SM	A-1-b, A-1-a			0	0-7	60-73	41-60	25-49
	7-11	Sand, loamy fine sand, coarse sand, very gravelly loamy coarse sand, loamy sand	SM, SP, SP-SM	A-1-b, A-2-4, A-1-a			0	0-7	53-85	18-78	9-54
	11-19	Sand, loamy fine sand, coarse sand, very gravelly loamy coarse sand, loamy sand	SM, SP, SW-SM	A-2-4, A-1-a			0	0-14	51-93	7-78	3-54
	19-31	Loamy sand, extremely gravelly coarse sand, loamy coarse sand, sand	SM, SP	A-1-b, A-1-a			0	0-22	51-93	7-78	3-48
	31-43	Sand, loamy sand, extremely gravelly coarse sand, loamy coarse sand	SM, SP, SW	A-1-b, A-1-a			0	0-22	51-93	7-78	3-48
	43-60	Sand, loamy sand, loamy coarse sand, loamy sand, coarse sand	SP, SM	A-3, A-2-4, A-1-b			0	0	100	92-100	48-74
	0-9	Mucky silt loam	OL	A-5			0	0	80-100	75-100	65-95
	9-35	Silty clay loam, silt loam	CL	A-4			0	0	80-100	75-100	65-95
296265 Alden-----	35-60	Gravelly loam	CL	A-4			0	0-5	60-95	50-90	45-90
296269 Fluents, (alluvial land)	0-6	Sandy loam	SM	A-4			0	0-5	75-100	60-100	50-80
	6-42	Sandy loam	ML	A-4			0	0-10	75-100	60-100	50-90
	42-60	Gravelly silt loam	CL	A-6			0	0	95-100	95-100	80-100

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas- sieve number		
			Unified	AASHTO	>10 in	3-10 in	4	10	40	
296271 Alvira-----	In				Pct	Pct				
	0-10	Gravelly loam, gravelly silt loam		A-4	0-5	3-15	70-100	60-95	55-90	
	10-21	Gravelly silt loam, silt loam		A-4	0	0-10	65-100	55-90	50-90	
	21-60	Very gravelly silt loam, gravelly silt loam		A-4	0	0-20	65-95	45-90	40-90	
Watson-----										
	0-10	Gravelly loam, silt loam	ML							
	10-27	Gravelly silty clay loam	CL	A-4	0-5	3-10	70-90	70-90	60-85	
	27-60	Gravelly clay loam, gravelly silty clay loam	CL	A-6 A-4	0 0	0-10 0-15	70-100 55-100	65-95 50-100	60-95 45-95	
296272 Bath-----										
	0-8	Channery silt loam	SM, ML, GM	A-4, A-2	0	5-15	55-80	50-75	40-75	
	8-27	Channery silt loam, gravelly loam, very channery silt loam	SM, ML, GM	A-4, A-2, A-1	0	5-10	55-95	50-90	40-85	
	27-60	Channery silt loam, gravelly loam, very channery silt loam	ML, SM, GC-GM, GM	A-4, A-2, A-1	0	10-15	30-80	25-75	15-75	
296273 Bath-----										
	0-8	Channery silt loam	GM, SM, CL-ML, GC-GM	A-4, A-2, A-1	0	10-15	30-80	25-75	15-75	
	8-27	Channery silt loam, gravelly loam, very channery silt loam	SM, ML, GM	A-4, A-2	0	5-15	55-80	50-75	40-75	
	27-60	Channery silt loam, gravelly loam, very channery silt loam	ML, SM, GC-GM, GM	A-4, A-2, A-1	0	10-15	30-80	25-75	15-75	
	60-64	Channery silt loam, channery loam, very channery loam	GM, SM, CL-ML, GC-GM	A-4, A-2, A-1	0	10-15	30-80	25-75	15-75	

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pas- sieve number				
			Unified	AASHTO	>10 in	3-10 in	4	10	40		
296274 Bath-----	In				Pct						
		SM, ML, GM	A-4, A-2								
	8-27	Channery silt loam, gravelly loam, very channery silt loam	SM, ML, GM	A-4, A-2, A-1	0	5-15	55-80	50-75	40-75	40-85	
	27-60	Channery silt loam, gravelly loam, very channery silt loam	ML, SM, GC-GM, GM	A-4, A-2, A-1	0	10-15	30-80	25-75	15-75	15-75	
	60-64	Channery silt loam, channery loam, very channery loam	GM, SM, CL-ML, GC-GM	A-4, A-2, A-1	0	10-15	30-80	25-75	15-75	15-75	
296275 Bath-----	0-8	Channery silt loam	SM, ML, GM	A-4, A-2							
		Channery loam, silt loam, gravelly loam	SM, ML, GM	A-4, A-2, A-1	0-5	5-20	55-80	50-75	40-75	40-85	
	27-60	Very channery loam, very channery silt loam, gravelly sandy loam	ML, SM, GC-GM, GM	A-4, A-2, A-1	0	10-15	30-80	25-75	15-75	15-75	
	60-64	Flaggy loam, channery silt loam, very channery sandy loam	GM, SM, CL-ML, GC-GM	A-4, A-2, A-1	0	10-15	30-80	25-75	15-75	15-75	
296276 Bath-----	0-8	Channery silt loam	SM, ML, GM	A-4, A-2							
		Channery loam, silt loam, gravelly loam	SM, ML, GM	A-4, A-2, A-1	0-5	5-20	55-80	50-75	40-75	40-85	
	27-60	Very channery loam, very channery silt loam, gravelly sandy loam	ML, SM, GC-GM, GM	A-4, A-2, A-1	0	10-15	30-80	25-75	15-75	15-75	
	60-64	Flaggy loam, channery silt loam, very channery sandy loam	GM, SM, CL-ML, GC-GM	A-4, A-2, A-1	0	10-15	30-80	25-75	15-75	15-75	
296277 Benson-----	0-8	Channery silt loam, channery loam	CL	A-4			0	10-30	75-90	70-85	60-85
		Very channery silt loam, very channery loam	GC	A-4			0	15-50	40-85	35-80	30-80
	18-22	Unweathered bedrock	---	---			---	---	---	---	



Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number		
			Unified	AASHTO	>10 in	3-10 in	4	10	40
296278 Benson-----	In				Pct	Pct			
	0-8	Channery silt loam, channery loam	CL	A-4		0	10-30	75-90	60-85
	8-18	Very channery silt loam, very channery loam	GC	A-4		0	15-50	40-85	30-80
	18-22	Unweathered bedrock	---	---	---	---	---	---	---
296279 Benson-----	0-8	Channery silt loam, channery loam	CL	A-4		0	10-30	75-90	60-85
	8-18	Very channery silt loam, very channery loam	GC	A-4		0	15-50	40-85	30-80
	18-22	Unweathered bedrock	---	---	---	---	---	---	---
296280 Braceville-----	0-3	Gravelly loam	ML, SM, CL, GM	A-4, A-2, A-1	0	0-10	65-90	60-80	40-70
	3-30	Gravelly sandy loam, silt loam, gravelly silt loam	ML, SM, CL-ML, GC-GM	A-4, A-2, A-1	0	0-10	65-100	60-100	40-100
	30-55	Gravelly sandy loam, gravelly silt loam, very gravelly loam	ML, SM, CL-ML, GC-GM	A-4, A-2, A-1	0	0-11	73-100	27-100	22-96
	55-60	Stratified sand and gravel	GW-GM, SM, GM, GP-GM	A-4, A-2, A-1	---	0-15	40-100	35-100	25-90
296281 Braceville-----	0-3	Gravelly loam	ML, SM, CL, GM	A-4, A-2, A-1	0	0-10	65-90	60-80	40-70
	3-30	Gravelly sandy loam, silt loam, gravelly silt loam	ML, SM, CL-ML, GC-GM	A-4, A-2, A-1	0	0-10	65-100	60-100	40-100
	30-55	Gravelly sandy loam, gravelly silt loam, very gravelly loam	ML, SM, CL-ML, GC-GM	A-4, A-2, A-1	0	0-11	73-100	27-100	22-96
	55-60	Stratified sand and gravel	GW-GM, SM, GM, GP-GM	A-4, A-2, A-1	---	0-15	40-100	35-100	25-90

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas- sieve number		
			Unified	AASHTO	>10	3-10	4	10	40	
					in	in				
	In				Pct	Pct				
296283 Buchanan-----	0-4	Channery loam	GM, ML, CL, CL-ML	A-6, A-4, A-2	2-15	15-35	50-85	45-70	40-70	40-70
	4-25	Gravelly loam, silt loam, gravelly sandy clay loam	ML, SM, CL, GM	A-6, A-4, A-2	0	0-20	50-100	45-90	40-90	40-90
	25-60	Gravelly loam, loam, channery clay loam	ML, SM, CL, GM	A-6, A-4, A-2	0	0-20	50-100	30-80	30-75	30-75
296288 Chippewa-----	0-8	Silt loam	ML	A-5	0	0-5	80-100	75-100	65-95	65-95
	8-16	Channery silt loam	CL	A-4	0	5-10	65-85	60-85	45-85	45-85
	16-48	Gravelly silt loam, very channery silt loam	GC	A-4	0	10-15	60-80	55-70	45-70	45-70
	48-80	Very gravelly loam, very channery silt loam	GC	A-4	0	10-15	60-80	55-70	45-70	45-70
Norwich-----	0-8	Silt loam	ML	A-5	0	0-5	80-100	75-95	65-90	65-90
	8-16	Channery silt loam	CL	A-4	0	0-15	65-95	65-90	60-85	60-85
	16-48	Channery silt loam	SC	A-4	0	10-20	60-90	55-70	35-70	35-70
	48-80	Very channery silt loam, channery loam, channery silt loam	SM, GC, ML, CL-ML, GM	A-4, A-2	0	10-15	60-80	55-70	45-70	45-70
296289 Chippewa-----	0-8	Channery silt loam, silt loam	SM	A-5	2-15	5-25	65-90	60-70	50-70	50-70
	8-16	Channery silt loam	CL	A-4	0	5-10	65-85	60-85	45-85	45-85
	16-48	Gravelly silt loam, very channery silt loam	GC	A-4	0	10-25	60-80	55-70	45-70	45-70
	48-80	Very gravelly loam, very channery silt loam	GC	A-4	0-2	10-25	60-80	55-70	45-70	45-70
Norwich-----	0-8	Channery silt loam, silt loam	ML	A-5	2-15	15-25	70-90	65-85	60-80	60-80
	8-16	Channery silt loam	CL	A-4	0	0-15	65-95	65-90	60-85	60-85
	16-48	Channery silt loam	SC	A-4	0	10-25	60-90	55-70	35-70	35-70
	48-80	Very channery silt loam, channery loam, channery silt loam	SM, GC, ML, CL-ML, GM	A-4, A-2	0	10-15	60-80	55-70	45-70	45-70
296295 Udorthents, cut and fill.										

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas sieve number		
			Unified	AASHTO	>10 in	3-10 in	Pct	4	10	40
296297 Dekalb-----	In				Pct	Pct				
296297 Dekalb-----	0-7	Very channery loam, extremely stony loam	SC-SM	A-4	2-15	15-30	50-90	45-80	40-75	
	7-24	Very channery sandy loam, channery sandy loam	SC-SM	A-4	0	5-40	50-85	40-75	40-75	
	24-32	Very channery sandy loam, channery silt loam	SM	A-2	0	10-50	45-85	25-75	20-65	
	32-36	Unweathered bedrock	---	---	---	---	---	---	---	---
296298 Dekalb-----	0-7	Very channery loam, extremely stony loam	SC-SM	A-4	2-15	15-30	50-90	45-80	40-75	
296298 Dekalb-----	7-24	Very channery sandy loam, channery sandy loam	SC-SM	A-4	0	5-40	50-85	40-75	40-75	
	24-32	Very channery sandy loam, channery sandy loam	SM	A-2	0	10-50	45-85	25-75	20-65	
	32-36	Unweathered bedrock	---	---	---	---	---	---	---	---
296303 Hazleton-----	0-5	Very channery sandy loam, extremely stony sandy loam	GM	A-4	2-15	15-50	60-85	50-80	50-70	
296303 Hazleton-----	5-31	Channery sandy loam, channery silt loam	SC-SM	A-4	0	0-50	60-95	45-90	35-70	
	31-58	Very channery coarse sandy loam, channery loam	GC-GM	A-2	0	5-60	50-80	35-75	25-65	
	58-69	Unweathered bedrock	---	---	---	---	---	---	---	---
296304 Holly-----	0-8	Silt loam	ML	A-4	0	0	90-100	85-100	80-100	
296304 Holly-----	8-28	Very fine sandy loam, silt loam	ML	A-4	0	0	85-100	75-100	70-95	
	28-41	Loam, silt loam	ML	A-4	0	0	85-100	75-100	50-95	
	41-60	Stratified gravelly sand to silt loam	SM	A-4	0	0-5	70-100	65-100	40-90	

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pas sieve number				
			Unified	AASHTO	>10 in	3-10 in	4	10	40		
296311 Lackawanna-----	In					Pct	Pct				
	0-8	Channery loam	ML, SM, CL, GM	A-4, A-2			2-15	15-30	40-100	40-95	35-90
	8-25	Channery loam, silt loam, flaggy loam	ML, SM, CL, GM	A-6, A-4, A-2			0	0-20	40-80	40-75	35-70
	25-60	Channery loam, channery silt loam, very channery loam	ML, SM, CL, GM	A-6, A-4, A-2			0	0-20	50-85	40-80	35-75
Bath-----	0-8	Channery silt loam	SM, ML, GM	A-4, A-2			2-15	5-25	55-80	50-75	40-75
	8-27	Channery silt loam, silt loam, gravelly loam	SM, ML, GM	A-4, A-2, A-1			0	5-10	55-95	50-90	40-85
	27-60	Channery silt loam, very channery silt loam, gravelly sandy loam	ML, SM, GC-GM, GM	A-4, A-2, A-1			0-2	10-15	30-80	25-75	15-75
	60-64	Flaggy loam, channery silt loam, very channery loam	GM, SM, CL-ML, GC-GM	A-4, A-2, A-1			0-2	10-15	30-80	25-75	15-75
296312 Lackawanna-----	0-8	Channery loam	SM, CL, GM, ML	A-4, A-2			2-15	15-30	40-100	40-95	35-90
	8-25	Channery loam, silt loam, flaggy loam	SM, GC, ML, CL, GM	A-4, A-2, A-6			0	0-20	40-80	40-75	35-70
	25-60	Channery loam, channery silt loam, very channery loam	SM, GC-GM, ML, CL, GM	A-6, A-4, A-2			0	0-20	50-85	40-80	35-75
	0-8	Channery loam	SM, CL, GM, ML	A-4, A-2			2-15	15-30	40-100	40-95	35-90
296313 Lackawanna-----	8-25	Channery loam, silt loam, flaggy loam	SM, GC, ML, CL, GM	A-4, A-2, A-6			0	0-20	40-80	40-75	35-70
	25-60	Channery loam, channery silt loam, very channery loam	SM, GC-GM, ML, CL, GM	A-6, A-4, A-2			0	0-20	50-85	40-80	35-75
	0-8	Channery loam	SM, CL, GM, ML	A-4, A-2			2-15	15-30	40-100	40-95	35-90
	8-25	Channery loam, silt loam, flaggy loam	SM, GC, ML, CL, GM	A-4, A-2, A-6			0	0-20	40-80	40-75	35-70
296315 Lackawanna-----	25-60	Channery loam, channery silt loam, very channery loam	SM, GC-GM, ML, CL, GM	A-6, A-4, A-2			0	0-20	50-85	40-80	35-75
	0-8	Channery loam	ML, CL, GM								
	8-25	Channery loam, silt loam, flaggy loam	ML, SM, CL, GM	A-4, A-2			2-15	15-30	40-100	40-95	35-90
	25-60	Channery loam, channery silt loam, very channery loam	ML, SM, CL, GM	A-6, A-4, A-2			0	0-20	50-85	40-80	35-75

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pas sieve number			
			Unified	AASHTO	>10	3-10	4	10	40	
					in	in				
296316 Lackawanna-----	In				Pct <td>Pct</td> <td></td> <td></td> <td></td> <td></td>	Pct				
	0-8	Channery loam	ML, SM, CL, GM	A-4, A-2		2-15	15-30	40-100	140-95	35-90
	8-25	Channery loam, silt loam, flaggy loam	ML, SM, CL, GM	A-6, A-4, A-2		0	0-20	40-80	140-75	35-70
	25-60	Channery loam, channery silt loam, very channery loam	ML, SM, CL, GM	A-6, A-4, A-2		0	0-20	50-85	140-80	35-75
296317 Laidig-----										
	0-6	Very gravelly loam, extremely stony loam	CL-ML	A-4		2-15	15-30	65-90	50-80	45-80
	6-33	Gravelly loam, very channery loam	SC	A-4		0	5-20	70-95	50-90	40-80
	33-65	Very gravelly loam, gravelly loam, channery sandy clay loam	GC	A-4		0-2	5-20	50-90	40-85	30-80
296326 Lordstown-----										
	0-7	Channery silt loam	SM, ML, GM	A-4		2-15	10-25	65-85	50-75	50-75
	7-26	Channery silt loam	SM, ML, GM	A-4		2-15	10-25	65-85	50-75	50-75
	26-30	Very channery silt loam, channery loam, very channery fine sandy loam	SM, ML, GM	A-4, A-2, A-1		0	5-25	40-75	30-70	25-70
	30-42	Unweathered bedrock	---	---		---	---	---	---	---
296327 Lordstown-----										
	0-7	Channery silt loam	SM, ML, GM	A-4		2-15	10-25	65-85	50-75	50-75
	7-26	Channery silt loam	SM, ML, GM	A-4		2-15	10-25	65-85	50-75	50-75
	26-30	Very channery silt loam, channery loam, very channery fine sandy loam	SM, ML, GM	A-4, A-2, A-1		0	5-25	40-75	30-70	25-70
	30-42	Unweathered bedrock	---	---		---	---	---	---	---
296328 Lordstown-----										
	0-7	Very channery silt loam, extremely stony silt loam	ML	A-4		2-15	10-25	65-85	50-75	50-75
	7-26	Very channery loam, very channery silt loam	ML	A-4		0	5-10	65-85	50-75	50-75
	26-30	Very channery silt loam	GM	A-4		0	5-25	40-75	30-70	25-70
	30-42	Unweathered bedrock	---	---		---	---	---	---	---

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pas sieve number			
			Unified	AASHTO	>10	3-10	4	10	40	
					in	in				
296328 Oquaga	In				Pct	Pct				
	0-7	Very channery loam, very channery silt loam	GM	A-4		2-15	10-25	50-85	40-70	35-70
	7-30	Very channery loam, very channery silt loam	SM	A-2		0	10-25	35-70	25-60	20-60
	30-42	Unweathered bedrock		---	---	---	---	---	---	---
296329 Mardin	0-8	Channery silt loam	SM, ML, GM	A-4, A-2		0	5-15	55-80	50-75	40-75
	8-17	Channery silt loam, loam, gravelly loam	GC, SC-SM, CL, CL-ML	A-4		0	5-10	60-90	55-90	45-90
	17-21	Channery silt loam, loam, gravelly loam	GC, SC-SM, CL, CL-ML	A-4		0	5-10	60-90	55-90	45-90
	21-60	Channery loam, channery silt loam, very channery loam	GC, SC, CL, CL-ML	A-4, A-2, A-1		0	10-25	40-80	35-75	30-70
	60-80	Channery loam, channery silt loam, very channery silt loam	GC, SC, CL, CL-ML	A-4, A-2, A-1		0	10-25	40-80	35-75	30-70
296330 Mardin	0-8	Channery silt loam	SM, ML, GM	A-4, A-2		0	5-15	55-80	50-75	40-75
	8-17	Channery silt loam, loam, gravelly loam	GC, SC-SM, CL, CL-ML	A-4		0	5-10	60-90	55-90	45-90
	17-21	Channery silt loam, loam, gravelly loam	GC, SC-SM, CL, CL-ML	A-4		0	5-10	60-90	55-90	45-90
	21-60	Channery loam, channery silt loam, very channery loam	GC, SC, CL, CL-ML	A-4, A-2, A-1		0	10-25	40-80	35-75	30-70
	60-80	Channery loam, channery silt loam, very channery silt loam	GC, SC, CL, CL-ML	A-4, A-2, A-1		0	10-25	40-80	35-75	30-70
296331 Mardin	0-8	Very stony silt loam	ML, SM, CL, GM	A-4, A-2		0-5	3-20	40-100	40-95	35-90
	8-17	Channery silt loam, loam, gravelly loam	GC, SC-SM, CL, CL-ML	A-4		0	5-10	60-90	55-90	45-90
	17-21	Channery silt loam, loam, gravelly loam	CL, CL-ML, GC, SC-SM	A-4		0	5-10	60-90	55-90	45-90
	21-60	Channery loam, channery silt loam, very channery loam	GC, SC, CL, CL-ML	A-4, A-2, A-1		0	10-25	40-80	35-75	30-70
	60-80	Channery loam, channery silt loam, very channery silt loam	GC, SC, CL, CL-ML	A-4, A-2, A-1		0	10-25	40-80	35-75	30-70

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas sieve number		
			Unified	AASHTO	>10 in	3-10 in	4			
296332 Mardin-----	In				Pct	Pct				
	0-8	Very stony silt loam	ML, SM, CL, GM	A-4, A-2	0-5	3-20	40-100	40-95	35-90	
	8-17	Channery silt loam, loam, gravelly loam	CL, CL-ML, GC, SC-SM	A-4	0	5-10	60-90	55-90	45-90	
	17-21	Channery silt loam, loam, gravelly loam	CL, CL-ML, GC, SC-SM	A-4	0	5-10	60-90	55-90	45-90	
	21-60	Channery loam, channery silt loam, very channery loam	GC, SC, CL, CL-ML	A-4, A-2, A-1	0	10-25	40-80	35-75	30-70	
	60-80	Channery loam, channery silt loam, very channery silt loam	GC, SC, CL, CL-ML	A-4, A-2, A-1	0	10-25	40-80	35-75	30-70	
296335 Meckesville----	0-9	Gravelly loam, gravelly silt loam	ML	A-4	0	0-15	80-100	60-70	60-65	
	9-36	Channery loam, loam	ML	A-4	0	0-20	60-100	60-95	60-90	
	36-60	Channery loam, loam	GC-GM	A-4	0	0-20	45-95	40-90	35-85	
	60-64	Very channery loam, loam	GC-GM	A-4	0	0-50	45-90	30-85	30-85	
296337 Meckesville----	0-9	Gravelly loam, very stony silt loam	ML	A-4	0-5	3-15	80-100	70-95	65-85	
	9-36	Channery loam, loam	ML	A-4	0	0-20	60-100	60-95	60-90	
	36-60	Channery loam, loam	GC-GM	A-4	0-2	0-20	45-95	40-90	35-85	
	60-64	Very channery loam, loam	GC-GM	A-4	0-2	0-50	45-90	30-85	30-85	
296338 Morris-----	0-8	Channery silt loam	ML, SM, CL, GM	A-4, A-2	0	0-15	60-95	50-75	40-75	
	8-17	Channery silt loam, channery loam, channery silty clay loam	SM, CL	A-4, A-2	0	0-20	60-95	45-80	40-80	
	17-70	Channery silt loam, channery loam, channery silty clay loam	SM, CL	A-4, A-2	0	0-20	60-95	45-80	40-80	
	70-80	Channery silt loam, channery loam, channery silty clay loam	SM, CL	A-4, A-2	0	0-20	60-95	45-80	40-80	

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass- sieve number			
			Unified	AASHTO	>10 in	3-10 in	4	10	40	
296339 Morris-----	In				Pct	Pct				
	0-8	Extremely stony silt loam, very channery silt loam	CL	A-4	2-15	5-25	60-95	55-85	40-80	
	8-17	Very channery silt loam, extremely stony silt loam	CL	A-4	2-15	5-25	60-95	55-85	40-80	
	17-70	Channery silt loam, gravelly loam	CL	A-4	0	0-20	60-95	45-80	40-80	
	70-80	Gravelly loam, channery silt loam	CL	A-4	0	0-20	60-95	45-80	40-80	
296340 Morris-----	0-8	Extremely stony silt loam, very channery silt loam	CL	A-4	2-15	5-25	60-95	55-85	40-80	
	8-17	Extremely stony silt loam, very channery silt loam	CL	A-4	2-15	5-25	60-95	55-85	40-80	
	17-70	Gravelly loam, channery loam	CL	A-4	0	0-20	60-95	45-80	40-80	
	70-80	Channery silt loam, gravelly loam	CL	A-4	0	0-20	60-95	45-80	40-80	
296341 Freetown, mucky peat-----	0-6 6-72	Mucky peat Muck, mucky peat	GP, PT GP, PT	A-1, A-8 A-1, A-8	0 ---	0 ---	---	---	---	
296342 Paupack, mucky peat (shallow)-	0-3 3-26 26-36 36-70	Mucky peat Muck Very stony muck Extremely stony sandy loam, extremely stony loam	GW, PT GP, PT GW, PT SC, GM	A-1, A-8 A-1, A-8 A-1, A-8 A-1, A-2	0 0-5 0 1-5	0 0-10 0 5-10	0 ---	---	---	
296343 Oquaga-----	0-7 7-30 30-42	Very channery loam Very channery loam Unweathered bedrock	GM SM ---	A-4 A-2 ---	0 0 ---	5-20 10-25 ---	50-85 35-70 ---	40-70 25-60 ---	35-70 20-60 ---	
Lackawanna-----	0-8 8-25 25-60	Channery loam Channery loam, loam Channery loam, silt loam	GM GC GC	A-4 A-4 A-4	0 0 0	0-15 0-20 0-20	40-80 40-80 50-85	40-75 40-75 40-80	35-70 35-70 35-75	



Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number			
			Unified	AASHTO	>10	3-10	4	10	40	
					in	in				
	In				Pct	Pct				
296344 Oquaga-----	0-7	Very channery loam	GM	A-4	0	5-20	50-85	40-70	35-70	
	7-30	Very channery loam	SM	A-2	0	10-25	35-70	25-60	20-60	
	30-42	Unweathered bedrock	---	---	---	---	---	---	---	
Lackawanna-----	0-8	Channery loam	GM	A-4	0	0-15	40-80	40-75	35-70	
	8-25	Channery loam, loam	GC	A-4	0	0-20	40-80	40-75	35-70	
	25-60	Channery loam, silt loam	GC	A-4	0	0-20	50-85	40-80	35-75	
296346 Oquaga-----	0-7	Very channery loam, extremely stony loam	GM	A-4	2-15	10-25	50-85	40-70	35-70	
	7-30	Very channery loam,	SM	A-2	0	10-25	35-70	25-60	20-60	
	30-42	Unweathered bedrock	---	---	---	---	---	---	---	
Lackawanna-----	0-8	Very channery loam, extremely stony loam	ML	A-4	2-15	15-30	40-100	40-95	35-90	
	8-25	Channery loam	GC	A-4	0	0-20	40-80	40-75	35-70	
	25-60	Channery loam	GM	A-4	0-2	0-20	50-85	40-80	35-75	
296347 Oquaga-----	0-7	Very channery loam, extremely stony loam	GM	A-4	2-15	10-25	50-85	40-70	35-70	
	7-30	Very channery loam,	SM	A-2	0	10-25	35-70	25-60	20-60	
	30-42	Unweathered bedrock	---	---	---	---	---	---	---	
Lackawanna-----	0-8	Very channery loam, extremely stony loam	ML	A-4	2-15	15-30	40-100	40-95	35-90	
	8-25	Channery loam	GC	A-4	0	0-20	40-80	40-75	35-70	
	25-60	Channery loam	GC	A-4	0-2	0-20	50-85	40-80	35-75	
296348 Philo-----	0-10	Silt loam	CL-ML	A-4	0	0-5	95-100	80-100	85-90	
	10-40	Fine sandy loam, silt loam	SC-SM	A-4	0	0-5	95-100	75-100	70-90	
	40-60	Gravelly fine sandy loam, stratified sand	SM	A-4	0	0-5	60-95	50-90	40-85	
296349 Pope-----	0-10	Silt loam	CL-ML	A-4	0	0	85-100	75-100	70-100	
	10-30	Silt loam, fine sandy loam	SM	A-4	0	0	95-100	80-100	51-95	
	30-60	Loamy very fine sand, sandy loam	SM	A-4	0	0-20	45-100	35-100	30-95	

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pas- sieve number				
			Unified	AASHTO	>10 in	3-10 in	4	10	40		
296350	In				Pct	Pct					
Pope-----	0-10	Silt loam	CL-ML	A-4	0	0			85-100	75-100	70-100
	10-30	Silt loam, fine sandy loam	SM	A-4	0	0			95-100	80-100	51-95
	30-60	Loamy very fine sand, sandy loam	SM	A-4	0	0-20			45-100	35-100	30-95
296351											
Rexford, somewhat poorly drained-	0-8	Silt loam	SC, SM, CL, ML	A-4, A-2	0	0-5			95-100	80-100	75-95
	8-18	Gravelly sandy loam, loam, silt loam	SM, ML, GM	A-4, A-2	0	0-10			60-100	50-100	40-85
	18-40	Gravelly sandy loam, gravelly loam, silt loam	SM, ML, GM	A-4, A-2	0	0-10			60-100	50-100	40-85
Rexford, poorly drained-----	40-63	Stratified gravel, very gravelly sandy loam	SP, SP-SM, GP-GM, GW	A-2, A-1	0	0-20			40-55	30-50	10-40
	0-8	Silt loam	SC, SM, CL, ML	A-4, A-2	0	0-5			95-100	80-100	75-95
	8-18	Gravelly sandy loam, loam, silt loam	SM, ML, GM	A-4, A-2	0	0-10			60-100	50-100	40-85
296355	18-40	Gravelly sandy loam, gravelly loam, silt loam	SM, ML, GM	A-4, A-2	0	0-10			60-100	50-100	40-85
	40-63	Stratified gravel, very gravelly sandy loam	SP, SP-SM, GP-GM, GW	A-2, A-1	0	0-20			40-55	30-50	10-40
	0-7	Silt loam	CL	A-4	0	0-5			95-100	90-100	85-100
Sheffield-----	7-19	Silty clay loam, silt loam	CL	A-6	0	0-5			95-100	90-95	85-95
	19-38	Silty clay loam, silt loam	CL	A-6	0	0-5			95-100	90-95	85-95
	38-66	Very channery silty clay loam, silt loam	CL	A-6	0	0-5			85-95	80-95	75-90

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage passing sieve number		
					Fragments			Percentage passing sieve number		
			Unified	AASHTO	>10 in	3-10 in	4	10	40	
296363 Dystrochrepts, very stony-----	In				Pct	Pct				
	0-6	Very channery loam	SM, ML, GM	A-4, A-2	0-5	5-15	60-85	50-80	50-70	
	6-32	Very channery silt loam, channery loam, very channery loam	SC, SM, GM, ML	A-4, A-2, A-1	0	0-50	60-95	45-90	35-70	
	32-56	Extremely channery loam, very channery silt loam, very channery loam	SC, SM, GC, GM	A-4, A-2, A-1	0	5-60	50-80	35-75	25-65	
	56-60	Unweathered bedrock	---	---	---	---	---	---	---	
296369 Wayland-----	0-9	Silty clay loam	ML	A-5	0	0	100	95-100	90-100	
	9-41	Silty clay loam, silt loam	ML	A-4	0	0	100	95-100	90-100	
	41-60	Very gravelly loam, stratified silt loam	CL	A-4	0	0	65-100	55-100	50-95	
296376 Wellsboro-----	0-8	Channery loam	SM, CL, GM, ML	A-4, A-2	2-15	15-30	40-100	40-95	35-90	
	8-17	Channery loam, channery silt loam, gravelly loam	ML, SM, CL-ML, GC-GM	A-4, A-2	0	0-15	70-100	60-100	55-95	
	17-21	Channery loam, channery silt loam, gravelly loam	ML, SM, CL-ML, GC-GM	A-4, A-2	0	0-15	70-100	60-100	55-95	
	21-60	Very channery loam, channery sandy loam, channery silt loam	ML, SM, CL, GM	A-4, A-2	0	0-20	55-90	45-90	35-80	
	60-80	Very channery silt loam, channery sandy loam, channery loam	ML, SM, CL, GM	A-4, A-2	0	0-20	55-90	45-90	35-80	

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas- sieve number		
					>10 in	3-10 in	Pct	4	10	40
			Unified	AASHTO						
296379 Wellsboro-----	In				Pct	Pct				
	0-8	Channery loam	SM, CL, GM, ML	A-4, A-2	2-15	15-30		40-100	40-95	35-90
	8-17	Channery loam, channery silt loam, gravelly loam	ML, SM, CL-ML, GC-GM	A-4, A-2	0	0-15		70-100	60-100	55-95
	17-21	Channery loam, channery silt loam, gravelly loam	ML, SM, CL-ML, GC-GM	A-4, A-2	0	0-15		70-100	60-100	55-95
	21-60	Very channery loam, channery sandy loam, channery silt loam	ML, SM, CL, GM	A-4, A-2	0	0-20		55-90	45-90	35-80
	60-80	Very channery silt loam, channery sandy loam, channery loam	ML, SM, CL, GM	A-4, A-2	0	0-20		55-90	45-90	35-80
296385 Wyoming-----	0-7	Gravelly sandy loam	SP-SM, SW-SM, GM, SM	A-3, A-2, A-1	0	0-15		40-90	30-80	10-60
	7-25	Gravelly sandy loam, very gravelly sandy loam	SM, SP-SM, GM, GP-GM	A-3, A-2, A-1	0	0-25		40-75	35-70	5-55
	25-60	Extremely gravelly loamy coarse sand, very gravelly sand, gravelly sandy loam	SM, SW, GP-GM, GW	A-1	0	5-30		30-65	20-55	5-50
296386 Wyoming-----	0-7	Gravelly sandy loam	SP-SM, SW-SM, GM, SM	A-3, A-2, A-1	0	0-15		40-90	30-80	10-60
	7-25	Gravelly sandy loam, very gravelly sandy loam	SM, SP-SM, GM, GP-GM	A-3, A-2, A-1	0	0-25		40-75	35-70	5-55
	25-60	Extremely gravelly loamy coarse sand, very gravelly sand, gravelly sandy loam	GP-GM, GW, SM, SW	A-1	0	5-30		30-65	20-55	5-50

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage passing sieve number			
			Unified	AASHTO	>10 in	3-10 in	Pct	4	10	40	
296387 Wyoming-----	In				Pct	Pct					
	0-7	Gravelly sandy loam	SP-SM, SW-SM, GM, SM	A-3, A-2, A-1	0	0-15	40-90	30-80	10-60		
	7-25	Gravelly sandy loam, very gravelly sandy loam	SM, SP-SM, GM, GP-GM	A-3, A-2, A-1	0	0-25	40-75	35-70	5-55		
	25-60	Extremely gravelly loamy coarse sand, very gravelly sand, gravelly sandy loam	GP-GM, GW, SM, SW	A-1	0	5-30	30-65	20-55	5-50		
296388 Wyoming-----	0-7	Gravelly sandy loam	SP-SM, SW-SM, GM, SM	A-3, A-2, A-1	0	0-15	40-90	30-80	10-60		
	7-25	Gravelly sandy loam, very gravelly sandy loam	SM, SP-SM, GM, GP-GM	A-3, A-2, A-1	0	0-25	40-75	35-70	5-55		
	25-60	Extremely gravelly loamy coarse sand, very gravelly sand, gravelly sandy loam	GP-GM, GW, SM, SW	A-1	0	5-30	30-65	20-55	5-50		
296389 Wyoming-----	0-8	Very gravelly sandy loam	SM	A-1	0	0-15	40-90	30-80	10-60		
	8-26	Very gravelly sandy loam, gravelly sandy loam	GM	A-1	0	0-25	40-75	35-70	5-55		
	26-60	Stratified sand to very gravelly loamy sand, very gravelly silt loam	GP-GM	A-1	0	5-30	30-65	20-55	5-50		
297185 Edgemere-----	0-2	Extremely stony mucky peat	PT	A-8	0	0	0	100	---		
	2-5	Extremely stony loam, extremely stony silt loam	OL, SM, GM, ML	A-7, A-5	10-30	5-25	70-90	65-85	60-80		
	5-24	Very stony loam, very stony sandy loam	SM, CL, GM, ML	A-4	5-20	5-20	65-95	65-90	60-85		
	24-66	Very gravelly sandy loam, very gravelly loam	SC-SM, SC, CL-ML, GC	A-4, A-2	1-5	10-25	60-90	55-70	35-70		

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas sieve number		
			Unified	AASHTO	>10 in	3-10 in	Pct	4	10	40
297185 Shohola-----	In				Pct	Pct				
	0-3	Very flaggy loam	SM, CL, GM, ML	A-6, A-4	5-20	15-35	70-90	165-85	60-80	
	3-24	Very flaggy loam, extremely flaggy silt loam, extremely flaggy fine sandy loam	SM, CL, ML, CL-ML, GM	A-6, A-4	1-5	0-15	65-95	165-90	60-85	
	24-72	Very flaggy fine sandy loam, very gravelly sandy loam, very gravelly loam	SC, SC-SM, CL-ML, GC	A-4, A-2	1-5	10-25	60-90	55-70	35-70	
297186 Edgemere-----	0-2	Extremely stony mucky peat	PT	A-8	10-20	5-12	5-10	100	---	---
	2-5	Extremely stony loam, extremely stony silt loam	OL, SM, GM, ML	A-7, A-5	10-30	5-25	70-90	165-85	60-80	
	5-24	Very stony loam, very stony sandy loam	SM, CL, GM, ML	A-4	5-20	5-20	65-95	165-90	60-85	
	24-66	Very gravelly sandy loam, very gravelly loam	SC-SM, SC, CL-ML, GC	A-4, A-2	1-5	10-25	60-90	55-70	35-70	
297188 Manlius-----	0-5	Very channery silt loam	GM, GC-GM	A-4, A-2, A-1	0-1	10-25	45-55	140-50	30-50	
	5-24	Very channery silt loam, very channery loam	GW-GM, GM, GC-GM	A-4, A-2, A-1	0	10-25	25-60	20-55	15-55	
	24-30	Very channery silt loam, extremely channery loam	GW-GM, GM, GC-GM	A-4, A-2, A-1	0-1	10-25	15-60	10-55	5-55	
	30-40	Unweathered bedrock	---	---	---	---	---	---	---	---
Arnot-----	0-3	Very channery loam	SM, ML, GM	A-5, A-4, A-2	25-55	15-30	60-85	55-80	45-80	
	3-14	Very channery silt loam, very channery loam	GM	A-4, A-2, A-1	0	10-25	30-60	25-55	20-55	
	14-24	Unweathered bedrock	---	---	---	---	---	---	---	---

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas sieve number			
			Unified	AASHTO	>10 in	3-10 in		4	10	40	
297189	In				Pct	Pct					
Manlius-----	0-5	Very channery silt loam	GM, GC-GM	A-4, A-2, A-1	0-1	10-25	45-55	40-50	30-50		
	5-24	Very channery silt loam, very channery loam	GW-GM, GM, GC-GM	A-4, A-2, A-1	0	10-25	25-60	20-55	15-55		
	24-30	Very channery silt loam, extremely channery loam	GW-GM, GM, GC-GM	A-4, A-2, A-1	0-1	10-25	15-60	10-55	5-55		
30-40		Unweathered bedrock	---	---	---	---	---	---	---		
	0-3	Very channery loam	SM, ML, GM	A-5, A-4, A-2	15-55	15-30	60-85	55-80	45-80		
	3-14	Very channery silt loam, very channery loam	GM	A-4, A-2, A-1	0	10-25	30-60	25-55	20-55		
14-24		Unweathered bedrock	---	---	---	---	---	---	---		
	0-11	Fine sandy loam	SC-SM, SM, ML	A-4	0	0-1	95-100	90-100	80-95		
	11-27	Fine sandy loam, gravelly fine sandy loam	SC-SM, SM, ML	A-4	0	0-1	95-100	80-100	40-80		
27-48		Fine sandy loam	SC-SM, SM, ML	A-4	0	0-5	80-100	70-100	60-90		
	48-70	Loamy sand	SM, ML	A-4	0	0-8	80-100	65-100	60-85		
	0-6	Fine sandy loam	SM, ML	A-4	0	0-5	95-100	95-100	70-100		
6-31		Loam, fine sandy loam, gravelly loam	SM, ML	A-4, A-2	0-1	15-25	80-100	75-100	40-70		
	31-70	Very cobbly loamy sand, gravelly loam, fine sandy loam	SM, GM	A-4, A-2, A-1	0-5	15-50	40-60	30-55	20-40		
	0-6	Fine sandy loam	SC-SM, SM, CL-ML, ML	A-4, A-2	0	0	85-100	75-100	51-85		
6-33		Fine sandy loam, sandy loam, loam	SC-SM, SM, CL-ML, ML	A-4, A-2	0	0	95-100	80-100	51-95		
	33-70	Sandy loam, loamy sand	SC-SM, SM, GM, ML	A-4, A-2, A-1	0	0-15	45-100	35-100	30-95		
	0-3	Mucky peat	GW, PT	A-1, A-8	0	0	0	---	---		
3-26		Muck	GP, PT	A-1, A-8	0-5	0-10	---	---	---		
	26-36	Very stony muck	GW, PT	A-1, A-8	0	0	0	---	---		
	36-70	Extremely stony sandy loam, extremely stony loam	SC, GM	A-2, A-1	1-5	5-10	40-90	40-60	30-40		

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas- sieve number			
			Unified	AASHTO	>10 in	3-10 in	Pct	4	10	40	
297196 Freetown-----	In										
	0-6	Mucky peat	GP, PT	A-1, A-8							
	6-72	Muck, mucky peat	GP, PT	A-1, A-8	0	0	0	---	---	---	
297197 Manlius-----											
	0-5	Very channery silt loam	SM, ML, GM	A-4, A-2	1-5	5-25	55-75	50-70	35-60		
	5-24	Very channery silt loam, very channery loam	GW-GM, GM, GC-GM	A-4, A-2, A-1	0	10-25	25-60	20-55	15-55		
	24-30	Very channery silt loam, extremely channery loam	GW-GM, GM, GC-GM	A-4, A-2, A-1	0-1	10-25	15-60	10-55	5-55		
	30-40	Unweathered bedrock	---	---	---	---	---	---	---		
297198 Manlius-----											
	0-5	Very channery silt loam	SM, ML, GM	A-4, A-2	1-5	5-25	55-75	50-70	35-60		
	5-24	Very channery silt loam, very channery loam	GW-GM, GM, GC-GM	A-4, A-2, A-1	0	10-25	25-60	20-55	15-55		
	24-30	Very channery silt loam, extremely channery loam	GW-GM, GM, GC-GM	A-4, A-2, A-1	0-1	10-25	15-60	10-55	5-55		
	30-40	Unweathered bedrock	---	---	---	---	---	---	---		
297201 Oquaga-----											
	0-2	Very channery loam	SM, ML, GM	A-5, A-4, A-2	1-5	10-20	50-85	40-70	35-70		
	2-26	Very channery silt loam, very stony loam	ML, SM, GC-GM, GM	A-4, A-2, A-1	1-20	10-25	35-70	25-60	20-60		
	26-32	Extremely stony sandy loam, very channery loam	GC-GM, GM, ML, SM	A-4, A-2, A-1	0-15	10-45	35-70	25-60	20-60		
	32-42	Unweathered bedrock	---	---	---	---	---	---	---		
297203 Delaware-----											
	0-14	Fine sandy loam	SM, ML	A-4	0	0	100	95-100	75-95		
	14-48	Fine sandy loam, very fine sandy loam	SM, ML	A-4	0	0-1	99-100	95-100	70-90		
	48-72	Fine sandy loam, loamy fine sand, loamy sand	SM, ML	A-4, A-2	0	0-5	95-100	95-100	80-95		
297204 Delaware-----											
	0-14	Fine sandy loam	SM, ML	A-4	0	0	100	95-100	75-95		
	14-48	Fine sandy loam, very fine sandy loam	SM, ML	A-4	0	0-1	99-100	95-100	70-90		
	48-72	Fine sandy loam, loamy fine sand, loamy sand	SM, ML	A-4, A-2	0	0-5	95-100	95-100	80-95		



Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pas sieve number			
			Unified	AASHTO	>10 in	3-10 in	4	10	40	
297205	In				Pct	Pct				
Delaware-----	0-14	Fine sandy loam	SM, ML	A-4	0	0	100	95-100	75-95	
	14-48	Fine sandy loam, very fine sandy loam	SM, ML	A-4	0	0-1	99-100	95-100	70-90	
	48-72	Fine sandy loam, loamy fine sand, loamy sand	SM, ML	A-4, A-2	0	0-5	95-100	95-100	80-95	
297209										
Philo-----	0-6	Loam	ML, CL-ML	A-4	0	0-5	95-100	80-100	75-90	
	6-36	Silt loam, loam, fine sandy loam	SM, ML, CL-ML	A-4	0	0-5	95-100	75-100	70-90	
	36-70	Stratified sand to very gravelly sandy loam	ML, SM, CL-ML, GM	A-2-4, A-2, A-1	0-2	0-5	45-95	40-90	20-70	
297210										
Barbour-----	0-10	Fine sandy loam	SC-SM, SM, CL-ML, ML	A-4, A-2	0	0	80-100	75-100	50-95	
	10-38	Silt loam, fine sandy loam, gravelly loam	SC-SM, SM, CL-ML, ML	A-4, A-2, A-1	0	0	60-100	55-95	30-95	
	38-72	Loamy fine sand, very cobbley loamy sand, very cobbly sand	SM, SP, GM, GP	A-3, A-4, A-1, A-2	0-1	0-5	35-95	30-95	20-80	
297216										
Wurtsboro-----	0-4	Stony fine sandy loam	SM, SC-SM, GM, ML	A-4, A-2	15-20	3-5	70-100	65-90	55-90	
	4-22	Fine sandy loam, gravelly fine sandy loam, channery loam	SM, GM	A-4, A-2	0-2	0-15	70-95	55-90	45-85	
	22-70	Gravelly fine sandy loam, fine sandy loam, very gravelly fine sandy loam, channery loam	SM, GM	A-4, A-2, A-1	0-2	0-20	50-95	35-90	30-80	
297217										
Wurtsboro-----	0-4	Stony fine sandy loam	SM, ML, GM	A-4, A-2	15-20	3-5	70-100	65-90	55-90	
	4-22	Fine sandy loam, gravelly fine sandy loam, channery loam	SM, GM	A-4, A-2	0	0-15	70-95	55-90	45-85	
	22-70	Gravelly fine sandy loam, fine sandy loam, very gravelly fine sandy loam, channery loam	SM, GM	A-4, A-2, A-1	0	0-20	50-95	35-90	30-80	

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas sieve number			
			Unified	AASHTO	>10 in	3-10 in	Pct	4	10	40	
297227	In				Pct	Pct					
Arnot-----	0-3	Very channery loam	GM	A-4, A-5, A-1, A-2	0	10-25	30-60	25-55	20-55		
	3-10	Very channery silt loam, very channery loam	GM	A-4, A-2, A-1	0	10-25	30-60	25-55	20-55		
	10-14	Extremely channery loam, very channery loam	GM	A-4, A-2, A-1	0	10-25	30-60	25-55	20-55		
	14-24	Unweathered bedrock	---	---	---	---	---	---	---		
297228											
Arnot-----	0-3	Very channery loam	GM	A-4, A-5, A-1, A-2	0	10-25	30-60	25-55	20-55		
	3-10	Very channery silt loam, very channery loam	GM	A-4, A-2, A-1	0	10-25	30-60	25-55	20-55		
	10-14	Extremely channery loam, very channery loam	GM	A-4, A-2, A-1	0	10-25	30-60	25-55	20-55		
	14-24	Unweathered bedrock	---	---	---	---	---	---	---		
297229											
Wyoming-----	0-3	Very cobbly sandy loam	SM, SW-SM, GM, GP-GM	A-3, A-2, A-1	0	20-40	40-90	30-80	10-60		
	3-33	Very cobbly sandy loam, very cobbly fine sandy loam	SM, SP-SM, GM, GP-GM	A-3, A-2, A-1	0	25-40	40-75	35-70	5-55		
	33-72	Extremely cobbly loamy coarse sand, very gravelly sand, gravelly sandy loam	SM, SW, GP-GM, GW	A-1	0-5	40-60	30-65	20-55	5-50		
297230											
Wyoming-----	0-3	Very cobbly sandy loam	SM, SW-SM, GM, GP-GM	A-3, A-2, A-1	0	20-40	40-90	30-80	10-60		
	3-33	Gravelly sandy loam, very cobbly fine sandy loam, very gravelly sandy loam	SM, SP-SM, GM, GP-GM	A-3, A-2, A-1	0	0-25	40-75	35-70	5-55		
	33-72	Extremely cobbly loamy coarse sand, very gravelly sand, gravelly sandy loam	SM, SW, GP-GM, GW	A-1	0-5	40-60	30-65	20-55	5-50		

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number				
			Unified	AASHTO	>10 in	3-10 in	4	10	40		
297231	In				Pct	Pct					
Wyoming-----	0-3	Very cobbly sandy loam	SM, SW-SM, GM, GP-GM	A-3, A-2, A-1	0	20-40	40-90	30-80	10-60		
	3-33	Very cobbly sandy loam, very cobbly fine sandy loam, very gravelly sandy loam	SM, SP-SM, GM, GP-GM	A-3, A-2, A-1	0-1	20-40	40-75	35-70	5-55		
	33-72	Extremely cobbly loamy coarse sand, very gravelly sand, gravelly sandy loam	SM, SW, GP-GM, GW	A-1	0-5	40-60	30-65	20-55	5-50		
297236											
Suncook-----	0-10	Loamy sand	SM	A-2	0			95-100	85-100	45-85	
	10-70	Sand, loamy sand	SP, SM	A-3, A-2, A-1	0			60-100	45-100	20-85	
297237											
Mardin-----	0-8	Channery silt loam	GM, ML, CL, GC	A-4	0	5-20	65-75	60-70	50-70		
	8-17	Channery silt loam, loam, channery loam	GC, SC-SM, CL, CL-ML	A-4	0	5-10	60-90	55-90	45-90		
	17-21	Channery silt loam, loam, channery loam	GC, SC-SM, CL, CL-ML	A-4	0	5-10	60-90	55-90	45-90		
	21-30	Channery loam, channery silt loam, very channery loam	GC, SC, CL, CL-ML	A-4, A-2, A-1	0	10-25	40-80	35-75	30-70		
	30-60	Very channery loam, channery silt loam	GC, SC, CL, CL-ML	A-4, A-2, A-1	0	10-25	40-80	35-75	30-70		
	60-80	Channery loam, channery silt loam, very channery loam	GC, SC, CL, CL-ML	A-4, A-2, A-1	0-1	10-25	40-80	35-75	30-70		
297238											
Mardin-----	0-8	Channery silt loam	GM, ML, CL, GC	A-4	0	5-20	65-75	60-70	50-70		
	8-17	Channery silt loam, loam, channery loam	GC, SC-SM, CL, CL-ML	A-4	0	5-10	60-90	55-90	45-90		
	17-21	Channery silt loam, loam, channery loam	GC, SC-SM, CL, CL-ML	A-4	0	5-10	60-90	55-90	45-90		
	21-30	Channery loam, channery silt loam, very channery loam	GC, SC, CL, CL-ML	A-4, A-2, A-1	0	10-25	40-80	35-75	30-70		
	30-60	Very channery loam, channery silt loam	GC, SC, CL, CL-ML	A-4, A-2, A-1	0	10-25	40-80	35-75	30-70		
	60-80	Channery loam, channery silt loam, very channery loam	GC, SC, CL, CL-ML	A-4, A-2, A-1	0-1	10-25	40-80	35-75	30-70		

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas- sieve number		
			Unified	AASHTO	>10	3-10	4	10	40	
					in	in				
	In				Pct	Pct				
297239 Mardin-----	0-8	Stony loam	GM, ML, CL, GC	A-4	10-20	5-10	65-75	160-70	50-70	
	8-17	Channery silt loam, loam, channery loam	GC, SC, CL, CL-ML	A-4	5-15	5-10	60-90	55-90	45-90	
	17-21	Channery silt loam, loam, channery loam	GC, SC, CL, CL-ML	A-4	5-15	5-10	60-90	55-90	45-90	
	21-30	Channery loam, channery silt loam, very channery loam	GC, SC, CL, CL-ML	A-4, A-2, A-1	0	10-25	40-80	35-75	30-70	
	30-60	Very channery loam, channery silt loam	GC, SC, CL, CL-ML	A-4, A-2, A-1	0	10-25	40-80	35-75	30-70	
	60-80	Channery loam, channery silt loam, very channery loam	GC, SC, CL, CL-ML	A-4, A-2, A-1	0-1	10-25	40-80	35-75	30-70	
297240 Mardin-----	0-8	Stony loam	GM, ML, CL, GC	A-4	10-20	5-10	65-75	160-70	50-70	
	8-17	Channery silt loam, loam, channery loam	GC, SC, CL, CL-ML	A-4	5-15	5-10	60-90	55-90	45-90	
	17-21	Channery silt loam, loam, channery loam	GC, SC, CL, CL-ML	A-4	5-15	5-10	60-90	55-90	45-90	
	21-30	Channery loam, channery silt loam, very channery loam	GC, SC, CL, CL-ML	A-4, A-2, A-1	0	10-25	40-80	35-75	30-70	
	30-60	Very channery loam, channery silt loam	GC, SC, CL, CL-ML	A-4, A-2, A-1	0	10-25	40-80	35-75	30-70	
	60-80	Channery loam, channery silt loam, very channery loam	GC, SC, CL, CL-ML	A-4, A-2, A-1	0-1	10-25	40-80	35-75	30-70	
297241 Unadilla-----	0-13	Silt loam	ML, CL-ML	A-4	0	0	100	100	100	
	13-49	Silt loam	CL, ML, CL-ML	A-4	0	0	100	100	100	
	49-80	Silt loam	CL, ML, CL-ML	A-4	0	0	100	100	100	

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number		
			Unified	AASHTO	>10 in	3-10 in	4	10	40
297242 Shohola-----	In				Pct	Pct			
	0-3	Extremely flaggy loam	SM, CL, GM, ML	A-6, A-4	5-20	15-35	70-90	65-85	60-80
	3-24	Very flaggy loam, extremely flaggy loam, extremely flaggy fine sandy loam, extremely flaggy silt loam	SM, CL, ML, CL-ML, GM	A-6, A-4	1-5	0-15	65-95	65-90	60-85
	24-72	Very gravelly fine sandy loam, very gravelly loam, very gravelly sandy loam, very flaggy fine sandy loam	SC, SC-SM, CL-ML, GC	A-4, A-2	1-5	10-25	60-90	55-70	35-70
	0-2	Extremely stony mucky peat	GW, PT	A-8	0	0	0	100	---
	2-5	Extremely stony loam, extremely stony silt loam	OL, SM, GM, ML	A-7, A-5	10-30	5-25	70-90	65-85	60-80
	5-24	Very stony sandy loam, extremely stony loam	SM, CL, GM, ML	A-4	5-20	5-20	65-95	65-90	60-85
	24-66	Very gravelly sandy loam, very gravelly loam	SC-SM, SC, CL-ML, GC	A-4, A-2	1-5	10-25	60-90	55-70	35-70
	0-3	Extremely flaggy loam	SM, CL, GM, ML	A-6, A-4	5-20	15-35	70-90	65-85	60-80
	3-24	Very flaggy loam, extremely flaggy loam, extremely flaggy fine sandy loam, extremely flaggy silt loam	SM, CL, ML, CL-ML, GM	A-6, A-4	1-5	0-15	65-95	65-90	60-85
297243 Shohola-----	24-72	Very gravelly fine sandy loam, very gravelly loam, very gravelly sandy loam, very flaggy fine sandy loam	SC, SC-SM, CL-ML, GC	A-4, A-2	1-5	10-25	60-90	55-70	35-70

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas- sieve number		
			Unified	AASHTO	>10	3-10	4	10	40	
					in	in				
	In				Pct	Pct				
297243 Edgemere-----	0-2	Extremely stony mucky peat	GW, PT	A-8	0	0	0	100	---	
	2-5	Extremely stony loam, extremely stony silt loam	OL, SM, GM, ML	A-7, A-5	10-30	5-25	70-90	65-85	60-80	
	5-24	Very stony sandy loam, extremely stony loam ML	SM, CL, GM, ML	A-4	5-20	5-20	65-95	65-90	60-85	
	24-66	Very gravelly sandy loam, very gravelly loam	SC-SM, SC, CL-ML, GC	A-4, A-2	1-5	10-25	60-90	55-70	35-70	
297244 Lordstown-----	0-3	Very channery loam	SM, ML, GM	A-4	0-1	20-40	65-85	50-75	50-75	
	3-28	Gravelly fine sandy loam, channery loam	SM, ML, GM	A-4	0	5-10	65-85	50-75	50-75	
	28-30	Very gravelly loam, channery silt loam, gravelly sandy loam	SM, ML, GM	A-4, A-2, A-1	0	5-25	40-75	30-70	25-70	
	30-40	Unweathered bedrock	---	---	---	---	---	---	---	
	0-4	Stony fine sandy loam	SM, ML, GM	A-4, A-2, A-1	5-15	5-20	60-90	50-85	30-80	
	4-32	Channery loam, flaggy sandy loam, channery fine sandy loam	SM, ML, GM	A-4, A-2, A-1	0-1	0-25	60-90	50-90	30-85	
297247 Chenango-----	32-70	Very gravelly fine sandy loam, flaggy sandy loam, channery loam	ML, SM, GM, GW-GM	A-4, A-2, A-1	0-1	5-25	50-80	35-80	20-70	
	0-10	Gravelly fine sandy loam	SM, ML	A-2-4, A-1	0-1	0-5	60-90	55-80	40-80	
	10-29	Gravelly fine sandy loam, very gravelly fine sandy loam	SM, GM	A-2-4, A-1	0-5	0-10	55-80	35-75	30-75	
	29-70	Extremely cobbly loamy coarse sand, very gravelly loamy coarse sand, extremely gravelly loamy coarse sand	GW-GM, GM GP-GM, GM	A-1	5-10	10-25	30-65	15-45	7-40	

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pas sieve number			
			Unified	AASHTO	>10 in	3-10 in	4	10	40	
297248 Chenango-----	In				Pct	Pct				
	0-10	Gravelly fine sandy loam	SM, ML	A-2-4, A-1	0-1	0-5	60-90	55-80	40-80	
	10-29	Gravelly fine sandy loam, very gravelly	SM, GM	A-2-4, A-1	0-5	0-10	55-80	35-75	30-75	
		fine sandy loam								
	29-70	Extremely cobbly loamy coarse sand, very gravelly loamy coarse sand, extremely gravelly loamy coarse sand	GW-GM, GP-GM, GM	A-1	5-10	10-25	30-65	15-45	7-40	
297249 Chenango-----	0-10	Gravelly fine sandy loam	SM, ML	A-2-4, A-1	0-1	0-5	60-90	55-80	40-80	
	10-29	Gravelly fine sandy loam, very gravelly	SM, GM	A-2-4, A-1	0-5	0-10	55-80	35-75	30-75	
		fine sandy loam								
	29-70	Extremely cobbly loamy coarse sand, very gravelly loamy coarse sand, extremely gravelly loamy coarse sand	GW-GM, GP-GM, GM	A-1	5-10	10-25	30-65	15-45	7-40	
297253 Craigsville-----	0-5	Very gravelly loam	SM, SC-SM, SC, CL-ML, ML	A-4, A-2	2-15	0-25	65-90	60-85	40-75	
	5-27	Gravelly sandy loam, cobbly loam, very gravelly sandy loam	SM, SC-SM, SC, GC, GM	A-4, A-2, A-1	0	25-60	50-80	30-65	25-60	
	27-77	Very gravelly loamy sand, very gravelly sandy loam, extremely cobbly loamy sand	GM, GC-GM, GC	A-2, A-1	0	35-75	35-55	30-50	20-45	
Wyoming-----	0-3	Very cobbly sandy loam	SM, SW-SM, GM, GP-GM	A-3, A-2, A-1	0	10-40	40-90	30-80	10-60	
	3-33	Very cobbly fine sandy loam, gravelly sandy loam, very gravelly sandy loam	SM, SP-SM, GM, GP-GM	A-3, A-2, A-1	0	0-25	40-75	35-70	5-55	
	33-72	Extremely cobbly loamy coarse sand, very gravelly sand, gravelly sandy loam	SM, SW, GP-GM, GW	A-1	0-5	5-30	30-65	20-55	5-50	

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pas- sieve number					
			Unified	AASHTO	>10 in	3-10 in	4	10	40			
298049 Wurtsboro, extremely stony	In					Pct	Pct					
	0-2	Slightly decomposed plant material	PT	A-8		0	0	100	100	100	100	100
	2-3	Loam	SC-SM, ML, CL	A-6, A-4		0	0	87-100	74-100	61-90	90-90	61-90
	3-5	Fine sandy loam, loam	CL, SM, SC-SM	A-6, A-2-4, A-4		0	0	87-100	73-100	57-95	95-95	57-95
	5-6	Loam, fine sandy loam	CL, SM, SC-SM	A-6, A-2-4, A-4		0	0	73-100	73-100	100-57	95-95	57-95
	6-18	Sandy loam, loam, fine sandy loam	CL, GM, SC-SM	A-6, A-1-b, A-2-4		0	0	50-100	50-100	100-33	87-87	33-87
	18-24	Gravelly sandy loam, loam, fine sandy loam	CL, GP-GM, SC-SM	A-6, A-1-a, A-1-b		0	0	19-100	19-100	100-12	87-87	12-87
	24-30	Gravelly sandy loam, loam, fine sandy loam	GC, GP-GM, SC-SM	A-6, A-1-a, A-2-4		0	0	24-75	24-75	16-65	65-65	16-65
	30-60	Gravelly sandy loam, loam, fine sandy loam	SC-SM, GP-GM, SC	A-6, A-2-4, A-1-a		0	0	33-87	33-87	22-75	75-75	22-75
298050 Wurtsboro, extremely stony	0-2	Slightly decomposed plant material	PT	A-8		0	0	100	100	100	100	100
	2-3	Fine sandy loam	ML, SM, SC-SM	A-2-4, A-4		0	0	87-100	74-100	59-93	93-93	59-93
	3-4	Fine sandy loam, loam	CL, SM, SC-SM	A-6, A-2-4, A-4		0	0	87-100	73-100	57-95	95-95	57-95
	4-6	Loam, fine sandy loam	CL, SM, SC-SM	A-6, A-2-4, A-4		0	0	73-100	73-100	57-95	95-95	57-95
	6-18	Sandy loam, loam, fine sandy loam	SC-SM, GM, CL	A-6, A-1-b, A-2-4		0	0	50-100	50-100	100-33	87-87	33-87
	18-24	Gravelly sandy loam, loam, fine sandy loam	CL, GP-GM, SC-SM	A-6, A-1-a, A-1-b		0	0	19-100	19-100	100-12	87-87	12-87
	24-33	Gravelly sandy loam, loam, fine sandy loam	GC, GP-GM, SC-SM	A-6, A-1-a, A-2-4		0	0	24-75	24-75	16-65	65-65	16-65
	33-60	Gravelly sandy loam, loam, fine sandy loam	SC, GP-GM, SC-SM	A-6, A-1-a, A-2-4		0	0	33-87	33-87	22-75	75-75	22-75



Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas sieve number		
			Unified	AASHTO	>10 in	3-10 in	Pct	4	10	40
298050 Swartswood, extremely stony	In				Pct	Pct				
	0-1	Slightly decomposed plant material	PT	A-8	0	0	0	100	100	100
	1-2	Loam	ML, GC-GM, CL	A-6, A-2-4, A-4	0	0	0	57-97	57-97	47-87
	2-3	Sandy loam, fine sandy loam	CL, SC-SM, GM	A-6, A-1-b, A-4	0	0	0	59-97	59-97	46-92
	3-4	Sandy loam, gravelly fine sandy loam	CL, GM, SC-SM	A-6, A-1-b, A-4	0	0	0	59-97	59-97	46-92
	4-21	Loam, sandy loam, gravelly fine sandy loam	CL, GM, GC-GM	A-6, A-1-b, A-2-4	0	0	0	54-92	54-92	41-89
	21-32	Loam, fine sandy loam, gravelly sandy loam	SC-SM, SC	A-6, A-1-b	0	0	0	61-88	61-88	42-77
	32-60	Loam, fine sandy loam, gravelly sandy loam	SC-SM, SC	A-6, A-1-b	0	0	0	61-88	61-88	42-77
298051 Wurtsboro, extremely stony	0-2	Slightly decomposed plant material	PT	A-8	0	0	0	100	100	100
	2-3	Fine sandy loam	ML, SM, SC-SM	A-2-4, A-4	0	0	0	87-100	74-100	59-93
	3-4	Fine sandy loam, loam	CL, SM, SC-SM	A-6, A-2-4, A-4	0	0	0	87-100	73-100	57-95
	4-6	Loam, fine sandy loam	CL, SM, SC-SM	A-6, A-2-4, A-4	0	0	0	73-100	73-100	57-95
	6-18	Sandy loam, loam, fine sandy loam	SC-SM, GM, CL	A-6, A-1-b, A-2-4	0	0	0	50-100	50-100	33-87
	18-24	Gravelly sandy loam, loam, fine sandy loam	CL, GP-GM, SC-SM	A-6, A-1-a, A-1-b	0	0	0	19-100	19-100	12-87
	24-33	Gravelly sandy loam, loam, fine sandy loam	GC, GP-GM, SC-SM	A-6, A-1-a, A-2-4	0	0	0	24-75	24-75	16-65
	33-60	Gravelly sandy loam, loam, fine sandy loam	SC-SM, SC, GP-GM	A-6, A-1-a, A-2-4	0	0	0	33-87	33-87	22-75

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number			
			Unified	AASHTO	>10 in	3-10 in	4	10	40	
298051 Swartswood, extremely stony	In				Pct	Pct				
	0-1	Slightly decomposed plant material	PT	A-8		0	0	100	100	100
	1-2	Loam	ML, GC-GM, CL	A-6, A-2-4, A-4		0	0	57-97	57-97	47-87
	2-3	Sandy loam, fine sandy loam	CL, SC-SM, GM	A-6, A-1-b, A-4		0	0	59-97	59-97	46-92
	3-4	Sandy loam, gravelly fine sandy loam	CL, GM, SC-SM	A-6, A-1-b, A-4		0	0	59-97	59-97	46-92
	4-21	Loam, sandy loam, gravelly fine sandy loam	GM, GC-GM, CL	A-6, A-1-b, A-2-4		0	0	54-92	54-92	41-89
	21-32	Loam, fine sandy loam, gravelly sandy loam	SC-SM, SC	A-6, A-1-b		0	0	61-88	61-88	42-77
298075 Colonie-----	32-60	Loam, fine sandy loam, gravelly sandy loam	SC-SM, SC	A-6, A-1-b		0	0	61-88	61-88	42-77
	0-2	Loamy fine sand	SM	A-4		0	0	95-100	90-100	88-10
	2-11	Loamy fine sand	SM	A-4		0	0	95-100	90-100	88-10
	11-24	Loamy fine sand, fine sand	SP-SM, SM	A-2-4, A-3		0	0	96-100	91-100	71-10
	24-40	Loamy fine sand, fine sandy loam, fine sand	SP-SM, SM	A-2-4, A-3		0	0	96-100	91-100	71-10
	40-62	Loamy fine sand, fine sandy loam, fine sand	SP-SM, SM	A-2-4, A-3		0	0	96-100	91-100	71-10
298188 Lackawanna, extremely stony	0-2	Slightly decomposed plant material	PT	A-8		0	0	100	100	100
	2-3	Cobbly fine sandy loam	GM, ML	A-2-4, A-4		5-23	13-23	59-100	59-100	48-10
	3-7	Cobbly fine sandy loam	CL, SM, CL-ML	A-6, A-2-4, A-4		3-23	3-23	77-96	77-96	63-96
	7-8	Cobbly fine sandy loam	GM, ML	A-1-b, A-4		3-23	3-30	56-96	56-96	46-96
	8-16	Fine sandy loam, silt loam, stony loam	CL, GM, CL-ML	A-6, A-2-4, A-4		3-23	3-30	56-96	56-96	43-96
	16-24	Fine sandy loam, silt loam, stony loam	CL, GM, CL-ML	A-6, A-2-4, A-4		3-23	3-30	56-96	56-96	43-96
	24-29	Loam, sandy loam, stony fine sandy loam, silt loam	CL, SM, SC-SM	A-6, A-2-4, A-4		2-17	2-22	66-98	66-98	51-98
298188 Lackawanna, extremely stony	29-60	Silt loam, loam, sandy loam, very cobbly fine sandy loam	CL, SM, GC-GM	A-6, A-4, A-2-4		2-17	2-22	66-98	66-98	51-98

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas- sieve number		
			Unified	AASHTO	>10 in	3-10 in	Pct	4	10	40
298189 Lackawanna, extremely stony	In				Pct	Pct				
	0-2	Slightly decomposed plant material	PT	A-8	0	0	0	100	100	100
	2-3	Cobbly fine sandy loam	GM, ML	A-2-4, A-4	5-23	13-23	59-100	59-100	48-100	48-100
	3-7	Cobbly fine sandy loam	CL, SM, CL-ML	A-6, A-2-4, A-4	3-23	3-23	77-96	77-96	63-96	63-96
	7-8	Cobbly fine sandy loam	GM, ML	A-1-b, A-4	3-23	3-30	56-96	56-96	46-96	46-96
	8-16	Fine sandy loam, silt loam, stony loam	CL, GM, CL-ML	A-6, A-2-4, A-4	3-23	3-30	56-96	56-96	43-96	43-96
	16-24	Fine sandy loam, silt loam, stony loam	CL, GM, CL-ML	A-6, A-2-4, A-4	3-23	3-30	56-96	56-96	43-96	43-96
	24-29	Loam, sandy loam, stony fine sandy loam, silt loam	CL, SM, SC-SM	A-6, A-2-4, A-4	2-17	2-22	66-98	66-98	51-98	51-98
	29-60	Silt loam, loam, sandy loam, very cobbly fine sandy loam	CL, SM, GC-GM	A-6, A-4, A-2-4	2-17	2-22	66-98	66-98	51-98	51-98
298221 Swartswood, extremely stony	0-1	Slightly decomposed plant material	PT	A-8	0	0	0	100	100	100
	1-2	Loam	ML, GC-GM, CL	A-6, A-2-4, A-4	0	0	57-97	57-97	47-87	47-87
	2-3	Sandy loam, fine sandy loam	CL, SC-SM, GM	A-6, A-1-b, A-4	0	0	59-97	59-97	46-92	46-92
	3-4	Sandy loam, gravelly fine sandy loam	CL, GM, SC-SM	A-6, A-1-b, A-4	0	0	59-97	59-97	46-92	46-92
	4-21	Loam, sandy loam, gravelly fine sandy loam	CL, GM, GC-GM	A-6, A-1-b, A-2-4	0	0	54-92	54-92	41-89	41-89
	21-32	Loam, fine sandy loam, gravelly sandy loam	SC-SM, SC	A-6, A-1-b	0	0	61-88	61-88	42-77	42-77
	32-60	Loam, fine sandy loam, gravelly sandy loam	SC-SM, SC	A-6, A-1-b	0	0	61-88	61-88	42-77	42-77

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas sieve number			
					Unified	AASHTO	>10 in	3-10 in	4	10	40
							Pct	Pct			
298222 Swartswood, extremely stony	In						Pct	Pct			
	0-1	Slightly decomposed plant material	PT	A-8			0	0	100	100	100
	1-2	Loam	ML, GC-GM, CL	A-6, A-2-4, A-4			0	0	57-97	57-97	47-87
	2-3	Sandy loam, fine sandy loam	CL, SC-SM, GM	A-6, A-1-b, A-4			0	0	59-97	59-97	46-92
	3-4	Sandy loam, gravelly fine sandy loam	CL, GM, SC-SM	A-6, A-1-b, A-4			0	0	59-97	59-97	46-92
	4-21	Loam, sandy loam, gravelly fine sandy loam	CL, GM, GC-GM	A-6, A-1-b, A-2-4			0	0	54-92	54-92	41-89
	21-32	Loam, fine sandy loam, gravelly sandy loam	SC-SM, SC	A-6, A-1-b			0	0	61-88	61-88	42-77
298223 Swartswood, extremely stony	32-60	Loam, fine sandy loam, gravelly sandy loam	SC-SM, SC	A-6, A-1-b			0	0	61-88	61-88	42-77
	0-1	Slightly decomposed plant material	PT	A-8			0	0	100	100	100
	1-2	Loam	ML, GC-GM, CL	A-6, A-2-4, A-4			0	0	57-97	57-97	47-87
	2-3	Sandy loam, fine sandy loam	CL, SC-SM, GM	A-6, A-1-b, A-4			0	0	59-97	59-97	46-92
	3-4	Sandy loam, gravelly fine sandy loam	CL, GM, SC-SM	A-6, A-1-b, A-4			0	0	59-97	59-97	46-92
	4-21	Loam, sandy loam, gravelly fine sandy loam	CL, GM, GC-GM	A-6, A-1-b, A-2-4			0	0	54-92	54-92	41-89
	21-32	Loam, fine sandy loam, gravelly sandy loam	SC-SM, SC	A-6, A-1-b			0	0	61-88	61-88	42-77
298224 Swartswood, extremely stony	32-60	Loam, fine sandy loam, gravelly sandy loam	SC-SM, SC	A-6, A-1-b			0	0	61-88	61-88	42-77

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage passing sieve number			
			Unified	AASHTO	>10 in	3-10 in	Pct	4	10	40	
298255 Delaware, rarely flooded-	In						Pct				
	0-1	Slightly decomposed plant material	PT	A-8		0	0	100	100	100	
	1-4	Fine sandy loam	CL-ML, SM	A-2-4, A-4		0	0	95-100	90-100	80-100	
	4-11	Fine sandy loam	SC-SM, SM	A-4, A-2-4		0	0	95-100	91-100	79-100	
	11-20	Fine sandy loam	SM, SC-SM, CL	A-2-4, A-4		0	0	95-100	91-100	81-100	
	20-33	Fine sandy loam	CL-ML, SM, ML	A-4		0	0	96-100	91-100	81-100	
	33-41	Fine sandy loam	CL-ML, SM	A-2-4, A-4		0	0	95-100	90-100	79-100	
	41-56	Loamy sand, loam, fine sandy loam	CL-ML, SM, CL	A-2-4, A-4		0	0	95-100	90-100	77-100	
	56-60	Loamy sand, fine sandy loam, loam	SM, CL, CL-ML	A-4		0	0	95-100	91-100	79-100	
298256 Delaware, rarely flooded-	0-1	Slightly decomposed plant material	PT	A-8		0	0	100	100	100	
	1-4	Fine sandy loam	CL-ML, SM	A-2-4, A-4		0	0	95-100	90-100	80-100	
	4-11	Fine sandy loam	SC-SM, SM	A-4, A-2-4		0	0	95-100	91-100	79-100	
	11-20	Fine sandy loam	SM, CL, SC-SM	A-2-4, A-4		0	0	95-100	91-100	81-100	
	20-33	Fine sandy loam	CL-ML, SM, ML	A-4		0	0	96-100	91-100	81-100	
	33-41	Fine sandy loam	CL-ML, SM	A-2-4, A-4		0	0	95-100	90-100	79-100	
	41-56	Loamy sand, loam, fine sandy loam	CL-ML, SM, CL	A-2-4, A-4		0	0	95-100	90-100	77-100	
	56-60	Loamy sand, fine sandy loam, loam	SM, CL, CL-ML	A-4		0	0	95-100	91-100	79-100	
298257 Wallpack-----	0-3	Silt loam	GC, CL	A-4, A-6, A-2-4		0	0	35-100	35-100	31-96	
	3-9	Gravelly silt loam	GC, CL	A-4, A-6, A-2-4		0	0	35-100	35-100	31-95	
	9-16	Fine sandy loam, sandy loam, loam, gravelly silt loam	CL, GM	A-1-b, A-6		0	0	39-100	39-100	30-100	
	16-25	Fine sandy loam, sandy loam, gravelly silt loam, loam	SM, CL	A-1-b, A-6		0	0	71-100	41-100	32-100	
	25-65	Loam, sandy loam, fine sandy loam, very gravelly silt loam	CL, SP, SC	A-6, A-1-a		0	0	53-100	7-100	5-100	

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pas- sieve number				
			Unified	AASHTO	>10 in	3-10 in	4	10	40		
298258	In					Pct	Pct				
Wallpack-----	0-3	Silt loam	GC, CL	A-4, A-6, A-2-4	0	0	35-100	35-100	31-96	31-96	
	3-9	Gravelly silt loam	GC, CL	A-4, A-6, A-2-4	0	0	35-100	35-100	31-95	31-95	
	9-16	Fine sandy loam, sandy loam, loam, gravelly silt loam	CL, GM	A-1-b, A-6	0	0	39-100	39-100	30-10	30-10	
	16-25	Fine sandy loam, sandy loam, gravelly silt loam, loam	SM, CL	A-1-b, A-6	0	0	71-100	41-100	32-10	32-10	
	25-65	Loam, sandy loam, fine sandy loam, very gravelly silt loam	CL, SP, SC	A-6, A-1-a	0	0	53-100	7-100	5-10	5-10	
298259											
Wallpack,											
extremely stony	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100	100	
	1-2	Gravelly silt loam	SC, OH	A-4, A-5	0	0	100	161-91	55-89	55-89	
	2-5	Sandy loam, fine sandy loam, gravelly silt loam, loam	GC-GM, CL	A-4, A-6	0	0	63-91	163-91	51-91	51-91	
	5-18	Fine sandy loam, sandy loam, loam, gravelly silt loam	CL, GC-GM	A-6, A-4	0	0	64-92	164-92	52-92	52-92	
	18-24	Fine sandy loam, sandy loam, silt loam, gravelly loam	CL, GC-GM, GC	A-1-b, A-6	0	0	45-79	145-79	36-79	36-79	
	24-42	Fine sandy loam, sandy loam, gravelly silt loam, loam	GC-GM, CL	A-2-4, A-6	0	0	46-80	146-80	36-80	36-80	
	42-60	Fine sandy loam, sandy loam, silt loam, gravelly loam	GC-GM, CL	A-1-b, A-6	0	0	45-79	145-79	36-79	36-79	

Table 14. --Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number				
			Unified	AASHTO	>10 in	3-10 in	4	10	40		
298260 Wallpack, extremely stony	In				Pct	Pct					
	0-1	Slightly decomposed plant material	PT	A-8	0	0	0	100	100	100	
	1-2	Gravelly silt loam	SC, OH	A-4, A-5	0	0	0	100	161-91	55-89	91-100
	2-5	Sandy loam, fine sandy loam, gravelly silt loam, loam	GC-GM, CL	A-4, A-6	0	0	0	63-91	163-91	51-91	91-100
	5-18	Fine sandy loam, sandy loam, loam, gravelly silt loam	CL, GC-GM	A-6, A-4	0	0	0	64-92	164-92	52-92	92-100
	18-24	Fine sandy loam, sandy loam, silt loam, gravelly loam	CL, GC-GM, GC	A-1-b, A-6	0	0	0	45-79	145-79	36-79	79-100
	24-42	Fine sandy loam, sandy loam, gravelly silt loam, loam	GC-GM, CL	A-2-4, A-6	0	0	0	46-80	146-80	36-80	80-100
	42-60	Fine sandy loam, sandy loam, silt loam, gravelly loam	GC-GM, CL	A-1-b, A-6	0	0	0	45-79	145-79	36-79	79-100
298261 Wallpack-----	0-3	Silt loam	GC, CL	A-4, A-6, A-2-4	0	0	0	35-100	135-100	31-96	96-100
	3-9	Gravelly silt loam	GC, CL	A-4, A-6, A-2-4	0	0	0	35-100	135-100	31-95	95-100
	9-16	Fine sandy loam, sandy loam, loam, gravelly silt loam	CL, GM	A-1-b, A-6	0	0	0	39-100	139-100	30-10	10-100
	16-25	Fine sandy loam, sandy loam, gravelly silt loam, loam	SM, CL	A-1-b, A-6	0	0	0	71-100	141-100	32-10	10-100
	25-65	Loam, sandy loam, fine sandy loam, very gravelly silt loam	CL, SP, SC	A-6, A-1-a	0	0	0	53-100	17-100	5-10	10-100

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas sieve number		
					Unified	AASHTO	>10 in	3-10 in	4	10
298262 Wallpack, extremely stony	In						Pct	Pct		
	0-1	Slightly decomposed plant material	PT		A-8		0	0	100	100
	1-2	Gravelly silt loam	SC, OH		A-4, A-5		0	0	100	61-91
	2-5	Sandy loam, fine sandy loam, gravelly silt loam, loam	GC-GM, CL		A-4, A-6		0	0	63-91	63-91
	5-18	Fine sandy loam, sandy loam, loam, gravelly silt loam	CL, GC-GM		A-6, A-4		0	0	64-92	64-92
	18-24	Fine sandy loam, sandy loam, silt loam, gravelly loam	CL, GC-GM, GC		A-1-b, A-6		0	0	45-79	45-79
	24-42	Fine sandy loam, sandy loam, gravelly silt loam, loam	GC-GM, CL		A-2-4, A-6		0	0	46-80	46-80
	42-60	Fine sandy loam, sandy loam, silt loam, gravelly loam	GC-GM, CL		A-1-b, A-6		0	0	45-79	45-79
298265 Venango, extremely stony	0-1	Slightly decomposed plant material	PT		A-8		0	0	100	100
	1-6	Silt loam	CL		A-6		0	0	74-100	74-100
	6-16	Silty clay loam, loam, silt loam	CL		A-6		0	0	70-92	70-92
	16-22	Loam, silt loam, gravelly silty clay loam	GC, CL		A-7-6, A-6		0	0	46-93	46-93
	22-34	Loam, silt loam, gravelly silty clay loam	GC, CL		A-7-6, A-6		0	0	46-93	46-93
	34-60	Loam, silt loam, gravelly silty clay loam	GC, CL		A-7-6, A-6		0	0	46-93	46-93



Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas sieve number		
					Unified	AASHTO	>10 in	3-10 in	4	10
298266 Venango, extremely stony	In						Pct	Pct		
	0-1	Slightly decomposed plant material	PT		A-8		0	0	100	100
	1-6	Silt loam	CL		A-6		0	0	74-100	74-100
	6-16	Silty clay loam, loam, silt loam	CL		A-6		0	0	70-92	70-92
	16-22	Loam, silt loam, gravelly silty clay loam	GC, CL		A-7-6, A-6		0	0	46-93	46-93
	22-34	Loam, silt loam, gravelly silty clay loam	GC, CL		A-7-6, A-6		0	0	46-93	46-93
	34-60	Loam, silt loam, gravelly silty clay loam	GC, CL		A-7-6, A-6		0	0	46-93	46-93
298409 Swartswood, extremely stony	0-1	Slightly decomposed plant material	PT		A-8		0	0	100	100
	1-2	Loam	ML, GC-GM, CL		A-6, A-2-4, A-4		0	0	57-97	57-97
	2-3	Sandy loam, fine sandy loam	CL, SC-SM, GM		A-6, A-1-b, A-4		0	0	59-97	59-97
	3-4	Sandy loam, gravelly fine sandy loam	CL, GM, SC-SM		A-6, A-1-b, A-4		0	0	59-97	59-97
	4-21	Loam, sandy loam, gravelly fine sandy loam	CL, GM, GC-GM		A-6, A-1-b, A-2-4		0	0	54-92	54-92
	21-32	Loam, fine sandy loam, gravelly sandy loam	SC-SM, SC		A-6, A-1-b		0	0	61-88	61-88
	32-60	Loam, fine sandy loam, gravelly sandy loam	SC-SM, SC		A-6, A-1-b		0	0	61-88	61-88

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas- sieve number			
					Unified	AASHTO	>10	3-10	4	10	40
							in	in			
298411 Swartswood, extremely stony	In				Pct	Pct					
	0-1	Slightly decomposed plant material	PT	A-8			0	0	100	100	100
	1-2	Loam	ML, GC-GM, CL	A-6, A-2-4, A-4			0	0	57-97	57-97	47-87
	2-3	Sandy loam, fine sandy loam	CL, SC-SM, GM	A-6, A-1-b, A-4			0	0	59-97	59-97	46-92
	3-4	Sandy loam, gravelly fine sandy loam	CL, GM, SC-SM	A-6, A-1-b, A-4			0	0	59-97	59-97	46-92
	4-21	Loam, sandy loam, gravelly fine sandy loam	CL, GM, GC-GM	A-6, A-1-b, A-2-4			0	0	54-92	54-92	41-89
	21-32	Loam, fine sandy loam, gravelly sandy loam	SC-SM, SC	A-6, A-1-b			0	0	61-88	61-88	42-77
298413 Swartswood, extremely stony	32-60	Loam, fine sandy loam, gravelly sandy loam	SC-SM, SC	A-6, A-1-b			0	0	61-88	61-88	42-77
	0-1	Slightly decomposed plant material	PT	A-8			0	0	100	100	100
	1-2	Loam	ML, GC-GM, CL	A-6, A-2-4, A-4			0	0	57-97	57-97	47-87
	2-3	Sandy loam, fine sandy loam	CL, SC-SM, GM	A-6, A-1-b, A-4			0	0	59-97	59-97	46-92
	3-4	Sandy loam, gravelly fine sandy loam	CL, GM, SC-SM	A-6, A-1-b, A-4			0	0	59-97	59-97	46-92
	4-21	Loam, sandy loam, gravelly fine sandy loam	CL, GM, GC-GM	A-6, A-1-b, A-2-4			0	0	54-92	54-92	41-89
	21-32	Loam, fine sandy loam, gravelly sandy loam	SC-SM, SC	A-6, A-1-b			0	0	61-88	61-88	42-77
	32-60	Loam, fine sandy loam, gravelly sandy loam	SC-SM, SC	A-6, A-1-b			0	0	61-88	61-88	42-77

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number			
			Unified	AASHTO	>10 in	3-10 in	4	10	40	
318498 Hazen, very stony-----	In				Pct	Pct				
	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100	
	1-10	Loam	ML, SC-SM, CL	A-6, A-4	0	0	86-100	86-100	71-90	100
	10-18	Sandy loam, coarse sandy loam	SC, SC-SM, SM	A-4, A-1-b, A-2-4	0	0	72-100	72-100	50-79	
	18-29	Sand, loamy sand, very stony loamy coarse sand, coarse sand	SC-SM, GP, SM	A-2-4, A-1-a, A-1-b	0-61	0-51	14-92	14-92	6-64	
	29-41	Sand, loamy sand, very gravelly coarse sand, loamy coarse sand	SP-SC, GP, SP	A-1-b, A-1-a	0-61	0-51	37-79	5-66	2-40	
	41-60	Sand, loamy sand, extremely gravelly coarse sand, loamy coarse sand	SP-SC, GP	A-1-b, A-1-a	0-61	0-51	37-79	5-66	2-40	
Hoosic, very stony-----	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100	
	1-9	Gravelly loam	ML, GC, GC-GM	A-6, A-4, A-2-4	0	0	57-97	145-97	37-87	
	9-21	Loam, sandy loam, very gravelly coarse sandy loam	SC, GP, GM	A-6, A-1-a	0	0-21	38-85	7-85	4-61	
	21-27	Sand, coarse sand, extremely gravelly loamy coarse sand, loamy sand	SC-SM, GP, GP-GM	A-2-4, A-1-b, A-1-a	0	0-51	41-85	6-78	3-54	
	27-37	Loamy sand, sand, extremely gravelly coarse sand, loamy coarse sand	SC-SM, GP	A-1-b, A-1-a	0-14	0-51	37-85	6-78	2-48	
	37-49	Loamy sand, sand, extremely gravelly coarse sand, loamy coarse sand	SC-SM, GP, SP	A-1-b, A-1-a	0	0-51	41-85	6-78	2-48	
	49-60	Loamy sand, sand, extremely gravelly coarse sand, loamy coarse sand	GP, SC-SM, SW	A-1-b, A-1-a	0-14	0-51	41-85	6-78	2-48	

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas- sieve number		
			Unified	AASHTO	>10 in	3-10 in	Pct	4	10	40
318533 Hazen, very stony-----	In				Pct	Pct				
	0-1	Slightly decomposed plant material	PT	A-8		0	0	100	100	100
	1-10	Loam	ML, SC-SM, CL	A-6, A-4		0	0	86-100	86-100	71-90
	10-18	Sandy loam, coarse sandy loam	SC, SC-SM, SM	A-4, A-1-b, A-2-4		0	0	72-100	72-100	50-79
	18-29	Sand, loamy sand, very stony loamy coarse sand, coarse sand	SC-SM, GP, SM	A-2-4, A-1-a, A-1-b		0-61	0-51	14-92	14-92	6-64
	29-41	Sand, loamy sand, very gravelly coarse sand, loamy coarse sand	SP-SC, GP, SP	A-1-b, A-1-a		0-61	0-51	37-79	5-66	2-40
	41-60	Sand, loamy sand, extremely gravelly coarse sand, loamy coarse sand	SP-SC, GP	A-1-b, A-1-a		0-61	0-51	37-79	5-66	2-40
Hoosic, very stony-----	0-1	Slightly decomposed plant material	PT	A-8		0	0	100	100	100
	1-9	Gravelly loam	ML, GC, GC-GM	A-6, A-4, A-2-4		0	0	57-97	45-97	37-87
	9-21	Loam, sandy loam, very gravelly coarse sandy loam	SC, GP, GM	A-6, A-1-a		0	0-21	38-85	7-85	4-61
	21-27	Sand, coarse sand, extremely gravelly loamy coarse sand, loamy sand	SC-SM, GP, GP-GM	A-2-4, A-1-b, A-1-a		0	0-51	41-85	6-78	3-54
	27-37	Loamy sand, sand, extremely gravelly coarse sand, loamy coarse sand	SC-SM, GP	A-1-b, A-1-a		0-14	0-51	37-85	6-78	2-48
	37-49	Loamy sand, sand, extremely gravelly coarse sand, loamy coarse sand	SC-SM, GP, SP	A-1-b, A-1-a		0	0-51	41-85	6-78	2-48
	49-60	Loamy sand, sand, extremely gravelly coarse sand, loamy coarse sand	GP, SC-SM, SW	A-1-b, A-1-a		0-14	0-51	41-85	6-78	2-48

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pas- sieve number				
			Unified	AASHTO	>10	3-10	4	10	40		
					in	in					
	In				Pct	Pct					
319783 Catden-----	0-2	Mucky peat	PT	A-8		0	0	100	100	100	
	2-13	Muck	PT	A-8		0	0	100	100	100	
	13-20	Woody muck	PT	A-8		0	0	100	100	100	
	20-32	Muck	PT	A-8		0	0	100	100	100	
	32-60	Muck	PT	A-8		0	0	100	100	100	
319784 Fredon, very stony-----											
	0-1	Slightly decomposed plant material	PT	A-8		0	0	100	100	100	
	1-8	Silt loam	ML, CL	A-4		0	0	85-100	85-100	75-96	
	8-14	Fine sandy loam, very fine sandy loam, silt loam, loam	CL, ML	A-4		0	0	100	86-100	68-10	
	14-18	Fine sandy loam, very fine sandy loam, loam, silt loam	SM, CL	A-4		0	0	86-100	86-100	64-10	
	18-23	Fine sandy loam, very fine sandy loam, loam, silt loam	SM, CL	A-4		0	0	86-100	86-100	64-10	
	23-31	Loamy fine sand, loamy sand, sand, extremely gravelly loamy coarse sand, coarse sand	SP, SP-SM	A-1-b, A-1-a		0	0	77-87	21-49	10-34	
	31-36	Loamy fine sand, loamy sand, sand, extremely gravelly coarse sand, loamy coarse sand	SP-SM, SP	A-1-a		0	0	78-87	21-49	8-30	
	36-45	Loamy fine sand, loamy sand, sand, very gravelly coarse sand, loamy coarse sand	SP, SP-SM, SW	A-1-a		0	0	68-87	14-49	5-30	
	45-55	Loamy fine sand, loamy sand, sand, extremely gravelly coarse sand, loamy coarse sand	SP, SP-SM, SW	A-1-a		0	0	65-87	14-49	5-30	
	55-60	Loamy fine sand, loamy sand, sand, very gravelly coarse sand, loamy coarse sand	SP, SP-SM, SW	A-1-a		0	0	78-88	21-49	8-30	

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pas- sieve number				
			Unified	AASHTO	>10 in	3-10 in	4	10	40		
319784 Halsey, very stony-----	In				Pct	Pct					
	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100	100	
	1-5	Silt loam	ML, CL	A-4	0	0	100	92-100	82-96	82-96	
	5-11	Silt loam	ML, CL	A-4	0	0	100	92-100	82-96	82-96	
	11-20	Loam, very fine sandy loam, silt loam, fine sandy loam	ML, CL	A-4	0	0	100	86-100	68-100	68-100	
	20-25	Sand, loamy fine sand, coarse sand, loamy sand, loamy coarse sand	SP-SM, SM	A-1-b, A-2-4	0	0	100	54-92	32-76	32-76	
	25-35	Sand, loamy fine sand, loamy coarse sand, very gravelly coarse sand, loamy sand	SM, SW	A-1-b, A-1-a	0	0	66-85	25-78	10-48	10-48	
	35-49	Sand, loamy fine sand, loamy coarse sand, very gravelly coarse sand, loamy sand	SP-SM, SW	A-1-b, A-1-a	0	0	60-70	25-60	10-37	10-37	
	49-56	Sand, loamy fine sand, loamy coarse sand, extremely gravelly coarse sand, loamy sand	SP-SM, SW, SP	A-1-b, A-1-a	0	0	60-66	25-60	10-37	10-37	
	56-60	Sand, loamy fine sand, loamy coarse sand, extremely gravelly coarse sand, loamy sand	SP-SM, GP	A-1-b, A-1-a	0	0	43-66	25-60	10-37	10-37	
543222 Andover, extremely stony	0-8	Gravelly loam	SM, CL-ML, SC, CL, ML	A-4, A-2	5-10	5-15	70-100	65-95	60-90	60-90	
	8-17	Gravelly clay loam, gravelly loam, cobbly sandy clay loam	SM, SC-SM, SC, CL, ML	A-4, A-2	0-3	0-25	80-95	65-85	60-80	60-80	
	17-53	Gravelly clay loam, gravelly loam, cobbly sandy clay loam	SC-SM, SM, CL-ML, ML	A-4, A-2	0-3	0-25	80-95	65-85	60-85	60-85	
	53-65	Gravelly loam, very gravelly loam, cobbly sandy loam	SC-SM, SM, CL-ML, ML	A-4, A-2	0-3	5-30	70-95	55-90	50-75	50-75	

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number		
			Unified	AASHTO	>10 in	3-10 in	4	10	40
543222 Buchanan, extremely stony	In				Pct	Pct			
	0-6	Gravelly loam	ML, SC, GM, CL, CL-ML	A-6, A-4, A-2	6-20	15-35	50-85	45-70	40-70
	6-23	Gravelly loam, silt loam, gravelly sandy clay loam	SM, GC, ML, CL, GM	A-6, A-4, A-2	0-3	0-20	50-100	45-90	40-90
	23-47	Gravelly loam, loam, channery clay loam	SM, SC, ML, CL, GM	A-6, A-4, A-2	0-3	0-20	50-100	30-80	30-75
	47-61	Gravelly loam, silt loam, channery clay loam	SM, SC, ML, CL, GM	A-6, A-4, A-2	0-1	0-20	50-100	30-80	30-75
543243 Berks-----	0-10	Channery loam	ML, SC, GC, GM	A-4, A-2	0	5-20	50-80	45-70	40-60
	10-26	Channery silty clay loam, very channery loam, very channery silt loam	SC, SM, GC, GM	A-4, A-6, A-1, A-2	0	0-20	40-80	35-70	30-60
	26-33	Channery loam, extremely channery loam, channery silt loam	GC, SM, GM	A-2, A-1	0	0-30	35-65	25-55	20-40
	33-43	Bedrock	---	---	---	---	---	---	---
	0-8	Channery silt loam	SM, ML, GM	A-4, A-2, A-1	0	0-10	35-70	35-70	25-65
	8-15	Very channery silt loam, gravelly loam	GP-GM, GM	A-2, A-1	0-1	0-20	15-60	10-55	5-45
543246 Buchanan-----	15-18	Extremely channery silt loam, very channery silt loam, gravelly loam	GP-GM, GM	A-2, A-1	0-1	0-30	15-60	10-55	5-45
	18-20	Bedrock	---	---	---	---	---	---	---
	0-7	Silt loam, gravelly loam	ML, SC, GM, CL, CL-ML	A-6, A-4, A-2	0	0-10	50-100	45-75	40-75
	7-21	Gravelly loam, silt loam, clay loam	SM, GC, ML, CL, GM	A-6, A-4, A-2	0	0-20	50-100	45-90	40-90
	21-65	Cobbly clay loam, silt loam, loam	SM, SC, ML, CL, GM	A-6, A-4, A-2	0-1	0-25	50-100	30-80	30-75

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pas- sieve number				
			Unified	AASHTO	>10 in	3-10 in	4	10	40		
543247 Buchanan, extremely stony	In				Pct						
	0-3	Silt loam, gravelly loam	ML, SC, SC-SM, CL, CL-ML, GM	A-6, A-4, A-2	0	0-10	50-100	45-75	40-75		
	3-21	Gravelly loam, silt loam, clay loam	SM, GC, ML, CL, GM	A-6, A-4, A-2	0	0-20	50-100	45-90	40-90		
	21-65	Cobbly clay loam, silt loam, loam	SM, SC, ML, CL, GM	A-6, A-4, A-2	0-1	0-25	50-100	30-80	30-75		
543257 Chippewa-----	0-8	Silt loam	OL, ML	A-7, A-5	0-1	0-5	80-100	75-100	65-95		
	8-16	Channery silt loam, loam, channery silty clay loam	SC-SM, CL, ML, CL-ML, GM	A-4	0-1	5-10	65-85	60-85	45-85		
	16-48	Very channery silt loam, channery loam, channery silty clay loam	GC, SC, CL, CL-ML	A-4, A-2	0-2	10-15	60-80	55-70	45-70		
	48-80	Very channery silt loam, channery loam, channery silty clay loam	SM, GC, ML, CL-ML, GM	A-4, A-2	0-2	10-15	60-80	55-70	45-70		
543258 Chippewa-----	0-8	Silt loam	OL, ML	A-7, A-5	0-1	0-5	80-100	75-100	65-95		
	8-16	Channery silt loam, loam, channery silty clay loam	ML, SC-SM, CL, GM	A-4	0-1	5-10	65-85	60-85	45-85		
	16-48	Very channery silt loam, channery loam, channery silty clay loam	GC, SC, CL, CL-ML	A-4, A-2	0-2	10-15	60-80	55-70	45-70		
	48-80	Very channery silt loam, channery loam, channery silty clay loam	SM, GC, ML, CL-ML, GM	A-4, A-2	0-2	10-15	60-80	55-70	45-70		



Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas sieve number		
			Unified	AASHTO	>10 in	3-10 in	4	10	40	
543259 Chippewa, extremely stony	In				Pct	Pct				
	0-8	Gravelly silt loam	OL, SM, GM, ML	A-7, A-5						
	8-16	Channery silt loam, loam, channery silty clay loam	GM, ML, CL, GC	A-4						
	16-48	Very channery silt loam, channery loam, channery silty clay loam	GC, SC, CL, CL-ML	A-4, A-2						
	48-80	Very channery silt loam, channery loam, channery silty clay loam	GM, ML, CL, GC	A-4, A-2						
543271 Delaware-----	0-10	Fine sandy loam, loam	SM, ML	A-4						
	10-40	Fine sandy loam, very fine sandy loam	SM, ML	A-4						
	40-87	Loamy fine sand, fine sandy loam, loamy sand	SM, ML	A-4, A-2						
543276 Fluvaquents-----	0-6	Silt loam	SM, SC-SM, CL-ML, ML	A-4, A-2						
	6-62	Gravelly silty clay loam, gravelly sand, clay	SM, SC, CL, ML	A-4, A-2						
543292 Hazleton, extremely stony	0-6	Very channery loam	SM, GC-GM, GM, ML	A-4, A-2						
	6-43	Very channery loam, channery loam, loam	SM, SC-SM, SC, GM, ML	A-4, A-2, A-1						
	43-55	Extremely channery loam, very channery loam, very channery sandy loam, very channery loamy sand	SM, GC-GM, SC, GC, GM	A-4, A-2, A-1						
	55-80	Bedrock	---	---						

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas- sieve number		
					>10 in	3-10 in		4	10	40
			Unified	AASHTO						
543293 Hazleton, extremely stony	In				Pct	Pct				
	0-6	Very channery loam	SM, GC-GM, GM, ML	A-4, A-2	5-20	15-50	60-85	50-80	50-70	
	6-43	Very channery loam, channery loam, loam	SM, SC-SM, SC, GM, ML	A-4, A-2, A-1	0-5	0-50	60-95	45-90	35-70	
	43-60	Extremely channery loam, very channery loam, very channery sandy loam, very channery loamy sand	SM, GC-GM, SC, GC, GM	A-4, A-2, A-1	2-10	5-60	50-80	35-75	25-65	
	60-80	Bedrock	---	---	---	---	---	---	---	---
543299 Laidig, extremely stony	0-3	Very gravelly loam	SC-SM, SM, CL-ML, GC-GM	A-4	5-20	15-30	65-90	50-80	45-80	
	3-38	Gravelly loam, channery sandy clay loam, channery sandy loam	SC, SM, CL, ML	A-6, A-4, A-2	0-5	5-20	70-95	50-90	40-80	
	38-62	Gravelly loam, very channery loam, channery sandy loam	GC-GM, SC, CL-ML, GC	A-6, A-4, A-2	0-5	5-20	50-90	40-85	30-80	
543300 Laidig, extremely stony	0-3	Very gravelly loam	SC-SM, SM, CL-ML, GC-GM	A-4	5-20	15-30	65-90	50-80	45-80	
	3-38	Gravelly loam, channery sandy clay loam, channery sandy loam	SC, SM, CL, ML	A-6, A-4, A-2	0-5	5-20	70-95	50-90	40-80	
	38-62	Gravelly loam, very channery loam, channery sandy loam	GC-GM, SC, CL-ML, GC	A-6, A-4, A-2	0-5	5-20	50-90	40-85	30-80	
543304 Laidig-----	0-3	Very gravelly loam	SC-SM, SM, CL-ML, GC-GM	A-4	5-20	15-30	65-90	50-80	45-80	
	3-38	Gravelly loam, channery sandy clay loam, channery sandy loam	SC, SM, CL, ML	A-6, A-4, A-2	0-5	5-20	70-95	50-90	40-80	
	38-62	Gravelly loam, very channery loam, channery sandy loam	GC-GM, SC, CL-ML, GC	A-6, A-4, A-2	0-5	5-20	50-90	40-85	30-80	

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas sieve number		
			Unified	AASHTO	>10	3-10	4	10	40	
					in	in				
543327 Swartswood-----	In				Pct	Pct				
	0-11 11-34	Gravelly loam	SM, ML, GM	A-4, A-2, A-1	0	0-20	60-90	50-75	30-60	
		Gravelly fine sandy loam, flaggy sandy loam, channery loam	SM, ML, GM	A-4, A-2, A-1	0	0-25	60-90	50-90	30-85	
	34-47	Very gravelly fine sandy loam, flaggy sandy loam, channery loam	ML, SM, GM, GW-GM	A-4, A-2, A-1	0	5-25	50-85	35-80	20-75	
	0-11 11-34	Gravelly loam	SM, ML, GM	A-4, A-2, A-1	0	0-20	60-90	50-75	30-60	
		Gravelly fine sandy loam, flaggy sandy loam, channery loam	SM, ML, GM	A-4, A-2, A-1	0	0-25	60-90	50-90	30-85	
	34-47	Very gravelly fine sandy loam, flaggy sandy loam, channery loam	ML, SM, GM, GW-GM	A-4, A-2, A-1	0	5-25	50-85	35-80	20-75	
	543330 Swartswood, extremely stony	0-11 11-34	Gravelly loam	SM, ML, GM	A-4, A-2, A-1	2-15	5-20	60-90	50-85	30-80
Channery loam, flaggy sandy loam, gravelly fine sandy loam			SM, ML, GM	A-4, A-2, A-1	0	0-25	60-90	50-90	30-85	
34-47		Very gravelly fine sandy loam, flaggy sandy loam, channery loam	ML, SM, GM, GW-GM	A-4, A-2, A-1	0	5-25	50-80	35-80	20-70	
0-10 10-20		Gravelly loam	SM, ML, GM	A-4, A-2	0-10	15-25	70-100	65-90	55-90	
		Gravelly loam, fine sandy loam, channery silt, gravelly fine sandy loam	SM, GM	A-4, A-2	0	0-15	70-95	55-90	45-85	
20-64		Fine sandy loam, very gravelly fine sandy loam, very gravelly loam	SM, GM	A-4, A-2, A-1	0	0-20	50-95	35-90	30-80	

Table 14.--Engineering Properties--Continued

[illegible]

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas sieve number		
			Unified	AASHTO	>10	3-10	4	10	40	
					in	in				
	In				Pct	Pct				
543374 Wurtsboro-----	0-10	Gravelly silt loam	SM, GM	A-4, A-2		0	0-10	70-95	65-75	55-70
	10-20	Gravelly loam, fine sandy loam, gravelly sandy loam, channery silt loam	SM, GM	A-4, A-2		0	0-15	70-95	55-90	45-85
	20-64	Fine sandy loam, very gravelly sandy loam, very channery loam	SM, GM	A-4, A-2, A-1	0-1	0-20	50-95	35-90	30-80	
543375 Wurtsboro-----	0-10	Gravelly silt loam	SM, GM	A-4, A-2		0	0-10	70-95	65-75	55-70
	10-20	Gravelly loam, fine sandy loam, gravelly sandy loam, channery silt loam	SM, GM	A-4, A-2		0	0-15	70-95	55-90	45-85
	20-64	Fine sandy loam, very gravelly sandy loam, very channery loam	SM, GM	A-4, A-2, A-1	0-1	0-20	50-95	35-90	30-80	
612280 Scio-----	0-6	Silt loam	ML, CL	A-7-5, A-4		0	0	100	100	89-96
	6-13	Silt loam	ML, CL	A-7-5, A-4		0	0	100	100	89-96
	13-23	Very fine sandy loam, silt loam	ML, CL	A-6, A-4		0	0	100	100	82-10
	23-28	Very fine sandy loam, silt loam	ML, CL	A-6, A-4		0	0	100	100	82-10
	28-50	Very fine sandy loam, silt loam	ML, CL	A-6, A-4		0	0	100	100	82-10
	50-59	Very fine sandy loam, silt loam	ML, CL	A-6, A-4		0	0	100	100	82-10
	59-72	Very fine sandy loam, silt loam	ML, CL	A-6, A-4		0	0	100	100	82-10
612666 Colonie-----	0-2	Loamy fine sand	SM	A-4		0	0	95-100	90-100	88-10
	2-11	Loamy fine sand	SM	A-4		0	0	95-100	90-100	88-10
	11-24	Loamy fine sand, fine sand	SM, SP-SM	A-2-4, A-3		0	0	96-100	91-100	71-10
	24-40	Loamy fine sand, fine sandy loam, fine sand	SM, SP-SM	A-2-4, A-3		0	0	96-100	91-100	71-10
	40-62	Loamy fine sand, fine sandy loam, fine sand	SM, SP-SM	A-2-4, A-3		0	0	96-100	91-100	71-10

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage passing sieve number			
			Unified	AASHTO	>10 in	3-10 in	4	10	40		
612668 Hoosic, very stony-----	In				Pct	Pct					
	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100		
	1-9	Gravelly loam	ML, GC, GC-GM	A-6, A-4, A-2-4	0	0	57-97	45-97	37-87		
	9-21	Loam, sandy loam, very gravelly coarse sandy loam	SC, GP, GM	A-6, A-1-a	0	0-21	38-85	7-85	4-61		
	21-27	Sand, coarse sand, extremely gravelly loamy coarse sand, loamy sand	SC-SM, GP, GP-GM	A-2-4, A-1-b, A-1-a	0	0-51	41-85	6-78	3-54		
	27-37	Loamy sand, sand, extremely gravelly coarse sand, loamy coarse sand	SC-SM, GP	A-1-b, A-1-a	0-14	0-51	37-85	6-78	2-48		
	37-49	Loamy sand, sand, extremely gravelly coarse sand, loamy coarse sand	SC-SM, GP, SP	A-1-b, A-1-a	0	0-51	41-85	6-78	2-48		
	49-60	Loamy sand, sand, extremely gravelly coarse sand, loamy coarse sand	GP, SC-SM, SW	A-1-b, A-1-a	0-14	0-51	41-85	6-78	2-48		
	Hazen, very stony-----	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100	
		1-10	Loam	ML, SC-SM, CL	A-6, A-4	0	0	86-100	86-100	71-90	
10-18		Sandy loam, coarse sandy loam	SC, SC-SM, SM	A-4, A-1-b, A-2-4	0	0	72-100	72-100	50-79		
18-29		Sand, loamy sand, very stony loamy coarse sand, coarse sand	SC-SM, GP, SM	A-2-4, A-1-a, A-1-b	0-61	0-51	14-92	14-92	6-64		
29-41		Sand, loamy sand, very gravelly coarse sand, loamy coarse sand	SP-SC, GP, SP	A-1-b, A-1-a	0-61	0-51	37-79	5-66	2-40		
41-60		Sand, loamy sand, extremely gravelly coarse sand, loamy coarse sand	SP-SC, GP	A-1-b, A-1-a	0-61	0-51	37-79	5-66	2-40		

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage passing sieve number		
			Unified	AASHTO	>10 in	3-10 in		4	10	40
612724 Lordstown, very rocky-----	In				Pct	Pct				
	0-1	Slightly decomposed plant material	PT	A-8	0	0	0	100	100	100
	1-2	Loam	CL, SC-SM, ML	A-7-5, A-4	0	0	0	100	82-100	68-90
	2-3	Fine sandy loam	SM, CL, SC-SM	A-4, A-6	0	0	0	100	100	80-93
	3-5	Silt loam, loam	GC-GM, CL	A-2-4, A-4, A-6	0	0	0	47-100	47-100	38-93
	5-17	Silt loam, gravelly loam	CL, GW, GC	A-6, A-1-a, A-4	0	0	0	4-100	4-100	3-93
	17-22	Silt loam, gravelly loam	CL, GW, GC	A-1-a, A-6, A-4	0	0	0	4-100	4-100	3-93
	22-36	Silt loam, loam, very gravelly fine sandy loam	GW, CL, GC-GM	A-6, A-2-4, A-1-a	0	0	0	4-100	4-100	3-98
	36-80	Bedrock	---	---	---	---	---	---	---	---
	0-1	Slightly decomposed plant material	PT	A-8	0	0	0	100	100	100
Wallpack, very rocky-----	1-2	Gravelly silt loam	SC, OH	A-4, A-5	0	0	0	100	61-91	55-89
	2-5	Sandy loam, fine sandy loam, gravelly silt loam, loam	GC-GM, CL	A-4, A-6	0	0	0	63-91	63-91	51-91
	5-18	Fine sandy loam, sandy loam, loam, gravelly silt loam	CL, GC-GM	A-6, A-4	0	0	0	64-92	64-92	52-92
	18-24	Fine sandy loam, sandy loam, silt loam, gravelly loam	CL, GC-GM, GC	A-1-b, A-6	0	0	0	45-79	45-79	36-79
	24-42	Fine sandy loam, sandy loam, gravelly silt loam, loam	GC-GM, CL	A-2-4, A-6	0	0	0	46-80	46-80	36-80
	42-60	Fine sandy loam, sandy loam, silt loam, gravelly loam	GC-GM, CL	A-1-b, A-6	0	0	0	45-79	45-79	36-79

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage passing sieve number		
			Unified	AASHTO	>10 in	3-10 in	Pct	4	10	40
612732 Atherton, very poorly drained-	In				Pct	Pct				
	0-2	Slightly decomposed plant material	PT	A-8	0	0		100	100	100
	2-4	Moderately decomposed plant material	PT	A-8	0	0		100	100	100
	4-8	Mucky silt loam	OH	A-7-5	0	0		100	75-100	70-96
	8-10	Loam, silt loam, fine sandy loam, silty clay loam, very fine sandy loam	MH, SM, CL	A-7-5, A-6, A-4	0	0		100	76-100	61-100
	10-18	Loam, silt loam, fine sandy loam, silty clay loam, very fine sandy loam	SM, CL	A-7-6, A-6, A-4	0	0		100	78-100	62-100
	18-29	Loam, silt loam, fine sandy loam, silty clay loam, very fine sandy loam	SM, CL	A-7-6, A-6, A-4	0	0		100	78-100	62-100
	29-32	Loam, silt loam, fine sandy loam, silty clay loam, very fine sandy loam	SM, CL	A-7-6, A-6, A-4	0	0		100	78-100	62-100
	32-41	Loam, silt loam, fine sandy loam, silty clay loam, very fine sandy loam	SM, CL	A-7-6, A-6, A-4	0	0		100	78-100	62-100
	41-45	Loam, fine sandy loam, very fine sandy loam, silt loam, silty clay loam	CL, SM, SC-SM	A-7-6, A-2-4, A-4	0	0		100	75-100	56-100
	45-50	Fine sandy loam, loam, very fine sandy loam, silt loam, silty clay loam	SM, CL	A-7-6, A-6, A-4	0	0		100	75-100	56-100
	50-60	Loam, very fine sandy loam, fine sandy loam, silt loam, silty clay loam	CL, SM, SC-SM	A-7-6, A-2-4, A-4	0	0		100	75-100	56-100
	60-70	Loam, fine sandy loam, very fine sandy loam, silt loam, silty clay loam	CL, SM, SC-SM	A-7-6, A-2-4, A-4	0	0		100	75-100	56-100



Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pas sieve number		
			Unified	AASHTO	>10 in	3-10 in	4	10	40
612732 Atherton, poorly drained-	In				Pct	Pct			
	0-6	Loam	OH, ML	A-6, A-7-5	0	0	100	73-100	68-98
	6-12	Loam, silty clay loam, fine sandy loam, silt loam, very fine sandy loam	SC-SM, CL	A-6, A-7-6, A-4	0	0	100	75-100	61-10
	12-30	Fine sandy loam, loam, very fine sandy loam, silt loam, silty clay loam	SC-SM, CL	A-6, A-7-6, A-4	0	0	100	75-100	61-10
	30-40	Fine sandy loam, loam, sandy clay loam, silt loam, silty clay loam, very fine sandy loam	SC-SM, CL	A-7-6, A-2-4, A-6	0	0	100	77-100	62-10
	40-60	Fine sandy loam, loam, sandy clay loam, silt loam, silty clay loam, very fine sandy loam	SC-SM, CL	A-7-6, A-2-4, A-6	0	0	100	77-100	62-10
612738 Fluvaquents, occasionally flooded-----	0-5	Silt loam	CL, CL-ML, ML	A-7-6, A-4	0	0-5	95-100	74-100	67-10
	5-12	Silt loam	CL-ML, CL	A-6, A-4	0	0-5	95-100	76-100	68-10
	12-18	Silty clay loam, sandy loam, silt loam, sandy clay loam	SM, CL	A-1-b, A-7-6, A-6	0	0-11	90-100	57-100	37-92
	18-24	Sandy clay loam, sandy loam, silty clay loam, silt loam	SM, CL	A-1-b, A-7-6, A-6	0	0-11	90-100	57-100	37-92
	24-60	Silty clay loam, sandy clay loam, silt loam, sandy loam	SM, CL, SC-SM	A-7-6, A-4, A-1-b	0-1	0-10	90-100	59-100	43-10

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pas sieve number				
			Unified	AASHTO	>10 in	3-10 in	4	10	40		
612753 Wallpack, aeolian mantle, very stony-----	In					Pct	Pct				
	0-1	Slightly decomposed plant material	PT	A-8		0	0	100	100	100	
	1-2	Fine sandy loam	CL-ML, SM	A-2-4, A-4		0	0	74-100	74-100	65-10-100	
	2-8	Fine sandy loam	SC-SM, SM	A-4, A-2-4		0	0	75-100	75-100	65-10-100	
	8-14	Silt loam, loam, fine sandy loam	SM, CL, SC-SM	A-2-4, A-4		0	0	75-96	75-96	63-96	
	14-21	Silt loam, fine sandy loam, loam	CL-ML, GM, SM	A-1-b, A-4		0	0	50-96	50-96	42-96	
	21-26	Silt loam, gravelly fine sandy loam, loam	CL-ML, GM, SM	A-1-b, A-4		0	0	50-96	50-96	42-96	
	26-31	Silt loam, very gravelly fine sandy loam, loam	CL-ML, GP-GM, GM	A-4, A-1-a, A-1-b		0	0-33	23-90	23-90	19-90	
	31-36	Silt loam, very gravelly fine sandy loam, loam	CL-ML, GP-GM, GM	A-4, A-1-b, A-1-a		0	0-33	23-90	23-90	19-90	
	36-60	Silt loam, gravelly fine sandy loam, loam	SM, GP-GM, CL-ML	A-1-a, A-4, A-2-4		0	0	33-90	33-90	27-90	
612756 Wallpack, aeolian mantle, very stony-----	0-1	Slightly decomposed plant material	PT	A-8		0	0	100	100	100	
	1-2	Fine sandy loam	CL-ML, SM	A-2-4, A-4		0	0	74-100	74-100	65-10-100	
	2-8	Fine sandy loam	SC-SM, SM	A-4, A-2-4		0	0	75-100	75-100	65-10-100	
	8-14	Silt loam, loam, fine sandy loam	SM, CL, SC-SM	A-2-4, A-4		0	0	75-96	75-96	63-96	
	14-21	Silt loam, fine sandy loam, loam	CL-ML, GM, SM	A-1-b, A-4		0	0	50-96	50-96	42-96	
	21-26	Silt loam, gravelly fine sandy loam, loam	CL-ML, GM, SM	A-1-b, A-4		0	0	50-96	50-96	42-96	
	26-31	Silt loam, very gravelly fine sandy loam, loam	CL-ML, GP-GM, GM	A-4, A-1-a, A-1-b		0	0-33	23-90	23-90	19-90	
	31-36	Silt loam, very gravelly fine sandy loam, loam	CL-ML, GP-GM, GM	A-4, A-1-b, A-1-a		0	0-33	23-90	23-90	19-90	
	36-60	Silt loam, gravelly fine sandy loam, loam	SM, GP-GM, CL-ML	A-1-a, A-4, A-2-4		0	0	33-90	33-90	27-90	

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas sieve number		
			Unified	AASHTO	>10 in	3-10 in		4	10	40
612757 Wallpack, aeolian mantle, very stony-----	In				Pct	Pct				
	0-1	Slightly decomposed plant material	PT	A-8	0	0	0	100	100	100
	1-2	Fine sandy loam	CL-ML, SM	A-2-4, A-4	0	0	0	74-100	74-100	65-10
	2-8	Fine sandy loam	SC-SM, SM	A-4, A-2-4	0	0	0	75-100	75-100	65-10
	8-14	Silt loam, loam, fine sandy loam	SM, CL, SC-SM	A-2-4, A-4	0	0	0	75-96	75-96	63-96
	14-21	Silt loam, fine sandy loam, loam	CL-ML, GM, SM	A-1-b, A-4	0	0	0	50-96	50-96	42-96
	21-26	Silt loam, gravelly fine sandy loam, loam	CL-ML, GM, SM	A-1-b, A-4	0	0	0	50-96	50-96	42-96
	26-31	Silt loam, very gravelly fine sandy loam, loam	CL-ML, GP-GM, GM	A-4, A-1-a, A-1-b	0	0-33	23-90	23-90	23-90	19-90
	31-36	Silt loam, very gravelly fine sandy loam, loam	CL-ML, GP-GM, GM	A-4, A-1-b, A-1-a	0	0-33	23-90	23-90	23-90	19-90
	36-60	Silt loam, gravelly fine sandy loam, loam	SM, GP-GM, CL-ML	A-1-a, A-4, A-2-4	0	0	33-90	33-90	33-90	27-90
612767 Wellsboro, extremely stony	0-8	Silt loam	ML, CL	A-4	0	10-15	91-97	91-97	91-97	76-88
	8-15	Loam, cobbly silt loam	CL-ML, CL	A-4	0	2-26	75-93	75-93	75-93	60-87
	15-24	Silt loam, cobbly loam	CL, GC-GM, CL-ML	A-4	0	3-30	71-91	71-91	71-91	58-88
	24-29	Silt loam, cobbly loam	CL, GC-GM, CL-ML	A-4	0	3-30	63-91	63-91	63-91	52-88
	29-37	Loam, silt loam, cobbly sandy loam	CL, SC-SM	A-4, A-1-b, A-2-4	0	5-28	63-98	63-98	63-98	41-86
	37-60	Loam, silt loam, cobbly sandy loam	CL, SC-SM	A-4, A-1-b, A-2-4	0	5-28	63-98	63-98	63-98	41-86

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas- sieve number			
					Unified	AASHTO	>10 in	3-10 in	4	10	40
612768 Wellisboro, extremely stony	In						Pct	Pct			
	0-8	Silt loam	ML, CL				0	10-15	91-97	91-97	76-88
	8-15	Loam, cobbly silt loam	CL-ML, CL				0	2-26	75-93	75-93	60-87
	15-24	Silt loam, cobbly loam	CL, GC-GM, CL-ML				0	3-30	71-91	71-91	58-88
	24-29	Silt loam, cobbly loam	CL, GC-GM, CL-ML				0	3-30	63-91	63-91	52-88
	29-37	Loam, silt loam, cobbly sandy loam	CL, SC-SM				0	5-28	63-98	63-98	41-86
	37-60	Loam, silt loam, cobbly sandy loam	CL, SC-SM				0	5-28	63-98	63-98	41-86
613393 Alden, extremely stony	0-2	Slightly decomposed plant material	PT				0	0	100	100	100
	2-7	Silt loam	OH, ML				0	0	100	75-100	69-95
	7-14	Loam, silty clay loam, silt loam, very fine sandy loam	CL, ML				0	0	79-100	79-100	64-10
	14-28	Very fine sandy loam, silt loam, silty clay loam, loam	CL, ML				0	0	80-100	80-100	69-10
	28-43	Very fine sandy loam, silt loam, loam, silty clay loam	SM, CL				0	0	79-100	79-100	61-10
	43-60	Silty clay loam, fine sandy loam, silt loam, loam	GC-GM, CL				0	0	56-93	56-93	45-93
			A-2-4, A-6, A-7-6, A-4								
613447 Unadilla-----	0-8	Silt loam	ML, CL				0	0	100	95-100	84-96
	8-14	Silt loam	ML, CL				0	0	100	91-100	74-10
	14-25	Very fine sandy loam, loam, silt loam	ML, CL				0	0	100	91-100	74-10
	25-39	Very fine sandy loam, loam, silt loam	ML, CL				0	0	100	91-100	74-10
	39-60	Fine sandy loam, loamy very fine sand, very fine sandy loam, silt loam	SM, ML, CL				0	0	100	75-100	64-10

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pas sieve number			
			Unified	AASHTO	>10	3-10	4	10	40	
					in	in				
613448 Unadilla-----	In				Pct	Pct				
	0-8	Silt loam	ML, CL	A-4		0	0	100	95-100	84-96
	8-14	Silt loam	ML, CL	A-4		0	0	100	91-100	74-10
	14-25	Very fine sandy loam, loam, silt loam	ML, CL	A-4		0	0	100	91-100	74-10
	25-39	Very fine sandy loam, loam, silt loam	ML, CL	A-4		0	0	100	91-100	74-10
	39-60	Fine sandy loam, loamy very fine sand, very fine sandy loam, silt loam	SM, ML, CL	A-4		0	0	100	75-100	64-10
614075 Wurtsboro, extremely stony	0-2	Slightly decomposed plant material	PT	A-8		0	0	100	100	100
	2-3	Fine sandy loam	ML, SM, SC-SM	A-2-4, A-4		0	0	87-100	74-100	59-93
	3-4	Fine sandy loam, loam	CL, SM, SC-SM	A-6, A-2-4, A-4		0	0	87-100	73-100	57-95
	4-6	Loam, fine sandy loam	CL, SM, SC-SM	A-6, A-2-4, A-4		0	0	73-100	73-100	57-95
	6-18	Sandy loam, loam, fine sandy loam	SC-SM, GM, CL	A-6, A-1-b, A-2-4		0	0	50-100	50-100	33-87
	18-24	Gravelly sandy loam, loam, fine sandy loam	CL, GP-GM, SC-SM	A-6, A-1-a, A-1-b		0	0	19-100	19-100	12-87
	24-33	Gravelly sandy loam, loam, fine sandy loam	GC, GP-GM, SC-SM	A-6, A-1-a, A-2-4		0	0	24-75	24-75	16-65
	33-60	Gravelly sandy loam, loam, fine sandy loam	SC-SM, SC, GP-GM	A-6, A-1-a, A-2-4		0	0	33-87	33-87	22-75
	Swartswood, extremely stony	0-1	Slightly decomposed plant material	PT	A-8		0	0	100	100
1-2		Loam	ML, GC-GM, CL	A-6, A-2-4, A-4		0	0	57-97	57-97	47-87
2-3		Sandy loam, fine sandy loam	CL, SC-SM, GM	A-6, A-1-b, A-4		0	0	59-97	59-97	46-92
3-4		Sandy loam, gravelly fine sandy loam	CL, GM, SC-SM	A-6, A-1-b, A-4		0	0	59-97	59-97	46-92
4-21		Loam, sandy loam, gravelly fine sandy loam	GM, GC-GM, CL	A-6, A-1-b, A-2-4		0	0	54-92	54-92	41-89
21-32		Loam, fine sandy loam, gravelly sandy loam	SC-SM, SC	A-6, A-1-b		0	0	61-88	61-88	42-77
32-60		Loam, fine sandy loam, gravelly sandy loam	SC-SM, SC	A-6, A-1-b		0	0	61-88	61-88	42-77

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas- sieve number		
			Unified	AASHTO	>10 in	3-10 in	Pct	4	10	40
620179 Arnot, very rocky-----	In				Pct	Pct				
	0-1	Slightly decomposed plant material	PT	A-8	0	0	0	100	100	100
	1-2	Loam	CL-ML, ML	A-4, A-6	0	0	0	100	100	83-90
	2-3	Fine sandy loam	SM, CL, SC-SM	A-4, A-6	0	0	0	100	100	80-93
	3-4	Fine sandy loam	SM, CL, SC-SM	A-4, A-1-b, A-6	0	0	0	100	59-100	48-93
	4-12	Silt loam, very gravelly loam	CL, GP-GC, GC	A-1-a, A-6, A-2-4	0	0	0	14-100	14-100	11-93
	12-17	Silt loam, extremely gravelly loam	CL, GC, GP-GC	A-1-a, A-6, A-2-4	0	0	0	14-100	14-100	11-93
	17-80	Bedrock	---	---	---	---	---	---	---	---
	0-1	Slightly decomposed plant material	PT	A-8	0	0	0	100	100	100
	1-2	Loam	CL, SC-SM, ML	A-7-5, A-4	0	0	0	100	82-100	68-90
Lordstown, very rocky-----	2-3	Fine sandy loam	SM, CL, SC-SM	A-4, A-6	0	0	0	100	100	80-93
	3-5	Silt loam, loam	GC-GM, CL	A-2-4, A-4, A-6	0	0	0	47-100	47-100	38-93
	5-17	Silt loam, gravelly loam	CL, GW, GC	A-6, A-1-a, A-4	0	0	0	4-100	4-100	3-93
	17-22	Silt loam, gravelly loam	CL, GW, GC	A-1-a, A-6, A-4	0	0	0	4-100	4-100	3-93
	22-36	Silt loam, loam, very gravelly fine sandy loam	GW, CL, GC-GM	A-6, A-2-4, A-1-a	0	0	0	4-100	4-100	3-98
	36-80	Bedrock	---	---	---	---	---	---	---	---
	0-1	Slightly decomposed plant material	PT	A-8	0	0	0	100	100	100
	1-2	Loam	CL-ML, ML	A-4, A-6	0	0	0	100	100	83-90
	2-3	Fine sandy loam	SM, CL, SC-SM	A-4, A-6	0	0	0	100	100	80-93
	3-4	Fine sandy loam	SM, CL, SC-SM	A-4, A-1-b, A-6	0	0	0	100	59-100	48-93
620180 Arnot-----	4-12	Silt loam, very gravelly loam	CL, GP-GC, GC	A-1-a, A-6, A-2-4	0	0	0	14-100	14-100	11-93
	12-17	Silt loam, extremely gravelly loam	CL, GC, GP-GC	A-6, A-2-4, A-1-a	0	0	0	14-100	14-100	11-93
	17-80	Bedrock	---	---	---	---	---	---	---	---
	0-1	Slightly decomposed plant material	PT	A-8	0	0	0	100	100	100
	1-2	Loam	CL-ML, ML	A-4, A-6	0	0	0	100	100	83-90
	2-3	Fine sandy loam	SM, CL, SC-SM	A-4, A-6	0	0	0	100	100	80-93

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pass sieve number			
			Unified	AASHTO	>10 in	3-10 in	4	10	40		
In				Pct	Pct						
620180 Lordstown-----	0-1	Slightly decomposed plant material	PT	A-8		0	0		100	100	100
	1-2	Loam	CL, SC-SM, ML	A-7-5, A-4		0	0		100	82-100	68-90
	2-3	Fine sandy loam	SM, CL, SC-SM	A-4, A-6		0	0		100	100	80-93
	3-5	Silt loam, loam	GC-GM, CL	A-2-4, A-4, A-6		0	0		47-100	47-100	38-93
	5-17	Silt loam, gravelly loam	CL, GW, GC	A-6, A-1-a, A-4		0	0		4-100	4-100	3-93
	17-22	Silt loam, gravelly loam	CL, GW, GC	A-1-a, A-6, A-4		0	0		4-100	4-100	3-93
	22-36	Silt loam, loam, very gravelly fine sandy loam	GW, CL, GC-GM	A-6, A-2-4, A-1-a		0	0		4-100	4-100	3-98
	36-80	Bedrock	---	---		---	---		---	---	---
	0-1	Slightly decomposed plant material	PT	A-8		0	0		100	100	100
	1-2	Loam	CL-ML, ML	A-4, A-6		0	0		100	100	83-90
620181 Arnot-----	2-3	Fine sandy loam	SM, CL, SC-SM	A-4, A-6		0	0		100	100	80-93
	3-4	Fine sandy loam	SM, CL, SC-SM	A-4, A-1-b, A-6		0	0		100	59-100	48-93
	4-12	Silt loam, very gravelly loam	CL, GP-GC, GC	A-1-a, A-6, A-2-4		0	0		14-100	14-100	11-93
	12-17	Silt loam, extremely gravelly loam	CL, GC, GP-GC	A-6, A-2-4, A-1-a		0	0		14-100	14-100	11-93
	17-80	Bedrock	---	---		---	---		---	---	---
	0-1	Slightly decomposed plant material	PT	A-8		0	0		100	100	100
	1-2	Loam	CL, SC-SM, ML	A-7-5, A-4		0	0		100	82-100	68-90
	2-3	Fine sandy loam	SM, CL, SC-SM	A-4, A-6		0	0		100	100	80-93
	3-5	Silt loam, loam	GC-GM, CL	A-2-4, A-4, A-6		0	0		47-100	47-100	38-93
	5-17	Silt loam, gravelly loam	CL, GW, GC	A-6, A-1-a, A-4		0	0		4-100	4-100	3-93
Lordstown-----	17-22	Silt loam, gravelly loam	CL, GW, GC	A-1-a, A-6, A-4		0	0		4-100	4-100	3-93
	22-36	Silt loam, loam, very gravelly fine sandy loam	GW, CL, GC-GM	A-6, A-2-4, A-1-a		0	0		4-100	4-100	3-98
	36-80	Bedrock	---	---		---	---		---	---	---
	0-1	Slightly decomposed plant material	PT	A-8		0	0		100	100	100
	1-2	Loam	CL, SC-SM, ML	A-7-5, A-4		0	0		100	82-100	68-90
	2-3	Fine sandy loam	SM, CL, SC-SM	A-4, A-6		0	0		100	100	80-93
	3-5	Silt loam, loam	GC-GM, CL	A-2-4, A-4, A-6		0	0		47-100	47-100	38-93
	5-17	Silt loam, gravelly loam	CL, GW, GC	A-6, A-1-a, A-4		0	0		4-100	4-100	3-93
	17-22	Silt loam, gravelly loam	CL, GW, GC	A-1-a, A-6, A-4		0	0		4-100	4-100	3-93
	22-36	Silt loam, loam, very gravelly fine sandy loam	GW, CL, GC-GM	A-6, A-2-4, A-1-a		0	0		4-100	4-100	3-98

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pas sieve number				
			Unified	AASHTO	>10	3-10	4	10	40		
					in	in					
623089 Chippewa, extremely stony	In				Pct	Pct					
	0-2	Slightly decomposed plant material	PT		A-8	0	0	100	100	100	
	2-4	Silt loam	CL		A-6	0	0	100	100	91-100	
	4-8	Silty clay loam, loam, silt loam	CL		A-7-6, A-6	0	0	96-100	96-100	83-99	
	8-13	Silty clay loam, clay loam, silt loam, loam	CL		A-7-6, A-6	0	0	92-100	92-100	79-99	
	13-21	Loam, silty clay loam, fine sandy loam, silt loam, clay loam	CL, CL-ML		A-4, A-7-6, A-6	0	0	93-100	93-100	75-100	
	21-29	Silty clay loam, clay loam, loam, silt loam, fine sandy loam	CL, CL-ML		A-4, A-7-6, A-6	0	0	93-100	93-100	75-100	
	29-34	Loam, silty clay loam, fine sandy loam, silt loam, clay loam	GC-GM, CL		A-2-4, A-7-6, A-6	0	0	46-100	46-100	37-100	
	34-60	Loam, silty clay loam, silt loam, fine sandy loam, clay loam	CL, SM, SC-SM		A-1-a, A-7-6, A-4	0	0	100	40-100	30-100	
	623109 Farmington-----	0-1	Slightly decomposed plant material	PT		A-8	0	0	100	100	100
1-3		Silt loam	ML, CL		A-4	0	0	90-100	90-100	80-96	
3-9		Fine sandy loam, very fine sandy loam, silt loam, loam	GM, CL		A-4	0	0	62-91	62-91	50-91	
9-15		Fine sandy loam, very fine sandy loam, silt loam, loam	GM, CL		A-4	0	0	62-91	62-91	50-91	
15-80		Bedrock	---		---	---	---	---	---	---	
624811 Galway, very rocky-----		0-2	Slightly decomposed plant material	PT		A-8	0	0	100	100	100
		2-3	Moderately decomposed plant material	PT		A-8	0	0	100	100	100
		3-5	Loam	ML, CL-ML		A-4	0	0	88-100	88-100	73-90
		5-15	Fine sandy loam, silt loam, gravelly loam	GP-GM, SC, CL		A-1-a, A-4	0	0	17-100	17-100	13-98
		15-24	Fine sandy loam, silt loam, gravelly loam	GP-GM, GC, CL		A-1-a, A-4	0	0	17-100	17-100	13-98
	24-80	Bedrock	---		---	---	---	---	---	---	



Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas sieve number		
			Unified	AASHTO	>10 in	3-10 in	Pct	4	10	40
624813 Lackawanna, extremely stony	In				Pct	Pct				
	0-2	Slightly decomposed plant material	PT	A-8	0	0	0	100	100	100
	2-3	Cobbly fine sandy loam	GM, ML	A-2-4, A-4	5-23	13-23	59-100	59-100	48-100	48-100
	3-7	Cobbly fine sandy loam	CL, SM, CL-ML	A-6, A-2-4, A-4	3-23	3-23	77-96	77-96	63-96	63-96
	7-8	Cobbly fine sandy loam	GM, ML	A-1-b, A-4	3-23	3-30	56-96	56-96	46-96	46-96
	8-16	Fine sandy loam, silt loam, stony loam	CL, GM, CL-ML	A-6, A-2-4, A-4	3-23	3-30	56-96	56-96	43-96	43-96
	16-24	Stony loam, fine sandy loam, silt loam	CL, GM, CL-ML	A-6, A-2-4, A-4	3-23	3-30	56-96	56-96	43-96	43-96
	24-29	Loam, sandy loam, stony fine sandy loam, silt loam	CL, SM, SC-SM	A-6, A-2-4, A-4	2-17	2-22	66-98	66-98	51-98	51-98
	29-60	Silt loam, loam, sandy loam, very cobbly fine sandy loam	CL, SM, GC-GM	A-6, A-2-4, A-4	2-17	2-22	66-98	66-98	51-98	51-98
624816 Lordstown, very rocky-----	0-1	Slightly decomposed plant material	PT	A-8	0	0	0	100	100	100
	1-2	Loam	CL, SC-SM, ML	A-7-5, A-4	0	0	0	100	82-100	68-90
	2-3	Fine sandy loam	SM, CL, SC-SM	A-4, A-6	0	0	0	100	100	80-93
	3-5	Silt loam, loam	GC-GM, CL	A-2-4, A-4, A-6	0	0	0	47-100	47-100	38-93
	5-17	Silt loam, gravelly loam	CL, GW, GC	A-6, A-1-a, A-4	0	0	0	4-100	4-100	3-93
	17-22	Silt loam, gravelly loam	CL, GW, GC	A-1-a, A-6, A-4	0	0	0	4-100	4-100	3-93
	22-36	Silt loam, loam, very gravelly fine sandy loam	GW, CL, GC-GM	A-6, A-2-4, A-1-a	0	0	0	4-100	4-100	3-98
	36-80	Bedrock	---	---	---	---	---	---	---	---

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pas- sieve number			
			Unified	AASHTO	>10 in	3-10 in	4	10	40	
624816 Wallpack, very rocky-----	In					Pct	Pct			
	0-1	Slightly decomposed plant material	PT	A-8		0	0	100	100	100
	1-2	Gravelly silt loam	SC, OH	A-5, A-4		0	0	100	161-91	55-89
	2-5	Sandy loam, fine sandy loam, gravelly silt loam, loam	GC-GM, CL	A-6, A-4		0	0	63-91	163-91	51-91
	5-18	Fine sandy loam, sandy loam, loam, gravelly silt loam	CL, GC-GM	A-6, A-4		0	0	64-92	164-92	52-92
	18-24	Fine sandy loam, sandy loam, silt loam, gravelly loam	CL, GC-GM, GC	A-1-b, A-6		0	0	45-79	145-79	36-79
	24-42	Fine sandy loam, sandy loam, gravelly silt loam, loam	GC-GM, CL	A-2-4, A-6		0	0	46-80	146-80	36-80
	42-60	Fine sandy loam, sandy loam, silt loam, gravelly loam	GC-GM, CL	A-1-b, A-6		0	0	45-79	145-79	36-79
624822 Lordstown-----	0-1	Slightly decomposed plant material	PT	A-8		0	0	100	100	100
	1-2	Loam	CL, SC-SM, ML	A-7-5, A-4		0	0	100	82-100	68-90
	2-3	Fine sandy loam	SM, CL, SC-SM	A-4, A-6		0	0	100	100	80-93
	3-5	Silt loam, loam	GC-GM, CL	A-2-4, A-4, A-6		0	0	47-100	147-100	38-93
	5-17	Silt loam, gravelly loam	CL, GW, GC	A-6, A-1-a, A-4		0	0	4-100	4-100	3-93
	17-22	Silt loam, gravelly loam	CL, GW, GC	A-1-a, A-6, A-4		0	0	4-100	4-100	3-93
	22-36	Silt loam, loam, very gravelly fine sandy loam	GW, CL, GC-GM	A-6, A-2-4, A-1-a		0	0	4-100	4-100	3-98
	36-80	Bedrock	---	---		---	---	---	---	---

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas- sieve number		
					Unified			AASHTO		
In								Pct	in	Pct
624822 Wallpack-----	0-3	Silt loam	GC, CL	A-4, A-6, A-2-4	0	0	0	35-100	35-100	31-96
	3-9	Gravelly silt loam	GC, CL	A-4, A-6, A-2-4	0	0	0	35-100	35-100	31-95
	9-16	Fine sandy loam, sandy loam, loam, gravelly silt loam	CL, GM	A-1-b, A-6	0	0	0	39-100	39-100	30-10
	16-25	Fine sandy loam, sandy loam, gravelly silt loam, loam	SM, CL	A-1-b, A-6	0	0	0	71-100	41-100	32-10
	25-65	Loam, sandy loam, fine sandy loam, very gravelly silt loam	CL, SP, SC	A-6, A-1-a	0	0	0	53-100	7-100	5-10
624823 Lordstown-----	0-1	Slightly decomposed plant material	PT	A-8	0	0	0	100	100	100
	1-2	Loam	CL, SC-SM, ML	A-7-5, A-4	0	0	0	100	82-100	68-90
	2-3	Fine sandy loam	SM, CL, SC-SM	A-4, A-6	0	0	0	100	100	80-93
	3-5	Silt loam, loam	GC-GM, CL	A-2-4, A-4, A-6	0	0	0	47-100	47-100	38-93
	5-17	Silt loam, gravelly loam	CL, GW, GC	A-6, A-1-a, A-4	0	0	0	4-100	4-100	3-93
Wallpack-----	17-22	Silt loam, gravelly loam	CL, GW, GC	A-1-a, A-6, A-4	0	0	0	4-100	4-100	3-93
	22-36	Silt loam, loam, very gravelly fine sandy loam	GW, CL, GC-GM	A-6, A-2-4, A-1-a	0	0	0	4-100	4-100	3-98
	36-80	Bedrock	---	---	---	---	---	---	---	---
	0-3	Silt loam	GC, CL	A-4, A-6, A-2-4	0	0	0	35-100	35-100	31-96
	3-9	Gravelly silt loam	GC, CL	A-4, A-6, A-2-4	0	0	0	35-100	35-100	31-95
Wallpack-----	9-16	Fine sandy loam, sandy loam, loam, gravelly silt loam	CL, GM	A-1-b, A-6	0	0	0	39-100	39-100	30-10
	16-25	Fine sandy loam, sandy loam, gravelly silt loam, loam	SM, CL	A-1-b, A-6	0	0	0	71-100	41-100	32-10
	25-65	Loam, sandy loam, fine sandy loam, very gravelly silt loam	CL, SP, SC	A-6, A-1-a	0	0	0	53-100	7-100	5-10

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas- sieve number		
					in			4		
			Unified	AASHTO	>10	3-10				
624824 Lordstown-----	In				Pct	Pct				
	0-1	Slightly decomposed plant material	PT	A-8	0	0	0	100	100	100
	1-2	Loam	CL, SC-SM, ML	A-7-5, A-4	0	0	0	100	82-100	68-90
	2-3	Fine sandy loam	SM, CL, SC-SM	A-4, A-6	0	0	0	100	100	80-93
	3-5	Silt loam, loam	GC-GM, CL	A-2-4, A-4, A-6	0	0	0	47-100	47-100	38-93
	5-17	Silt loam, gravelly loam	CL, GW, GC	A-6, A-1-a, A-4	0	0	0	4-100	4-100	3-93
	17-22	Silt loam, gravelly loam	CL, GW, GC	A-1-a, A-6, A-4	0	0	0	4-100	4-100	3-93
	22-36	Silt loam, loam, very gravelly fine sandy loam	GW, CL, GC-GM	A-6, A-2-4, A-1-a	0	0	0	4-100	4-100	3-98
	36-80	Bedrock	---	---	---	---	---	---	---	---
Wallpack-----	0-3	Silt loam	GC, CL	A-4, A-6, A-2-4	0	0	0	35-100	35-100	31-96
	3-9	Gravelly silt loam	GC, CL	A-4, A-6, A-2-4	0	0	0	35-100	35-100	31-95
	9-16	Fine sandy loam, sandy loam, loam, gravelly silt loam	CL, GM	A-1-b, A-6	0	0	0	39-100	39-100	30-10
	16-25	Fine sandy loam, sandy loam, gravelly silt loam, loam	SM, CL	A-1-b, A-6	0	0	0	71-100	41-100	32-10
	25-65	Sandy loam, fine sandy loam, very gravelly silt loam, loam	CL, SP, SC	A-6, A-1-a	0	0	0	53-100	7-100	5-10
624826 Manlius, very rocky-----	0-1	Slightly decomposed plant material	PT	A-8	0	0	0	100	100	100
	1-2	Very channery silt loam	GC, ML	A-4	0	8-32	53-91	52-91	46-87	76
	2-18	Loam, extremely channery silt loam	CL, GC, GC-GM	A-4, A-2-4, A-1-b	0	18-40	35-79	34-78	29-76	
	18-27	Loam, extremely channery silt loam	GC, GC-GM	A-4, A-1-b, A-2-4	0	31-39	37-57	35-56	30-55	
	27-80	Bedrock	---	---	---	---	---	---	---	---

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number				
			Unified	AASHTO	in		4				
					>10	3-10					
624826 Nassau, very rocky-----	In				Pct	Pct					
	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100	100	100
	1-2	Very channery silt loam	ML, CL, GC	A-4	0	0-32	53-100	52-100	46-96	46-96	46-96
	2-15	Loam, extremely channery silt loam	GC-GM, CL,	A-1-b, A-2-4	0	18-40	35-79	34-78	29-76	29-76	29-76
	15-80	Bedrock	---	---	---	---	---	---	---	---	---
624827 Nassau, very rocky-----											
	0-7	Very channery silt loam	ML, CL, GC	A-4	0	0-32	53-100	52-100	46-96	46-96	46-96
	7-13	Loam, extremely channery silt loam	CL, GC-GM,	A-1-b, A-2-4	0	18-40	35-79	34-78	29-76	29-76	29-76
	13-80	Bedrock	---	---	---	---	---	---	---	---	---
Manlius, very rocky-----	0-9	Very channery silt loam	GC, ML	A-4	0	8-32	53-91	52-91	46-87	46-87	46-87
	9-20	Loam, extremely channery silt loam	CL, GC-GM,	A-2-4, A-1-b	0	18-40	35-79	34-78	29-76	29-76	29-76
	20-29	Loam, extremely channery silt loam	GC-GM, GC	A-4, A-1-b, A-2-4	0	31-39	37-57	35-56	30-55	30-55	30-55
	29-80	Bedrock	---	---	---	---	---	---	---	---	---
624828 Nassau, very rocky-----											
	0-7	Very channery silt loam	ML, CL, GC	A-4	0	0-32	53-100	52-100	46-96	46-96	46-96
	7-13	Loam, extremely channery silt loam	CL, GC-GM,	A-1-b, A-2-4	0	18-40	35-79	34-78	29-76	29-76	29-76
	13-80	Bedrock	---	---	---	---	---	---	---	---	---
Manlius, very rocky-----	0-9	Very channery silt loam	ML, GC	A-4	0	8-32	53-91	52-91	46-87	46-87	46-87
	9-20	Loam, extremely channery silt loam	CL, GC-GM,	A-2-4, A-1-b	0	18-40	35-79	34-78	29-76	29-76	29-76
	20-29	Loam, extremely channery silt loam	GC-GM, GC	A-4, A-1-b, A-2-4	0	31-39	37-57	35-56	30-55	30-55	30-55
	29-80	Bedrock	---	---	---	---	---	---	---	---	---
624829 Nassau, very rocky-----											
	0-7	Very channery silt loam	ML, CL, GC	A-4	0	0-32	53-100	52-100	46-96	46-96	46-96
	7-13	Loam, extremely channery silt loam	CL, GC-GM,	A-1-b, A-2-4	0	18-40	35-79	34-78	29-76	29-76	29-76
	13-80	Bedrock	---	---	---	---	---	---	---	---	---

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pass sieve number			
			Unified	AASHTO	>10 in	3-10 in	Pct	4	10	40	
624829 Manlius, very rocky-----	In				Pct	Pct					
	0-9	Very channery silt loam	ML, GC	A-4		0	8-32	53-91	52-91	46-87	
	9-20	Loam, extremely channery silt loam	CL, GC-GM, GC	A-4, A-2-4, A-1-b	0	18-40	35-79	34-78	29-76		
	20-29	Loam, extremely channery silt loam	GC-GM, GC	A-4, A-1-b, A-2-4	0	31-39	37-57	35-56	30-55		
	29-80	Bedrock	---	---	---	---	---	---	---	---	
624832 Nassau-----	0-1	Slightly decomposed plant material	PT	A-8		0	0	100	100	100	
	1-2	Very channery silt loam	ML, CL, GC	A-4		0	0-32	53-100	52-100	46-96	
	2-15	Loam, extremely channery silt loam	GC-GM, CL, GC	A-4, A-1-b, A-2-4	0	18-40	35-79	34-78	29-76		
	15-80	Bedrock	---	---	---	---	---	---	---	---	
624841 Oquaga-----	0-1	Slightly decomposed plant material	PT	A-8		0	0	100	100	100	
	1-4	Channery loam	SC-SM, ML	A-7-5, A-4		0	4-18	78-96	77-96	66-89	
	4-20	Fine sandy loam, very channery loam, silt loam	CL, GC-GM, GM	A-6, A-1-b, A-4		0	18-36	44-78	43-77	33-77	
	20-25	Fine sandy loam, sandy loam, extremely channery loam, silt loam	CL, GP-GM, GC-GM	A-6, A-2-4, A-1-a		0	23-46	14-70	12-70	9-70	
	25-80	Bedrock	---	---	---	---	---	---	---	---	
624845 Farmington-----	0-1	Slightly decomposed plant material	PT	A-8		0	0	100	100	100	
	1-3	Silt loam	ML, CL	A-4		0	0	90-100	90-100	80-96	
	3-9	Fine sandy loam, very fine sandy loam, silt loam, loam	GM, CL	A-4		0	0	62-91	62-91	50-91	
	9-15	Fine sandy loam, very fine sandy loam, silt loam, loam	GM, CL	A-4		0	0	62-91	62-91	50-91	
	15-80	Bedrock	---	---	---	---	---	---	---	---	

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number		
			Unified	AASHTO	>10 in	3-10 in	4	10	40
624845 Galway-----	In				Pct	Pct			
	0-2	Slightly decomposed plant material	PT	A-8	0	0	100	100	100
	2-3	Moderately decomposed plant material	PT	A-8	0	0	100	100	100
	3-5	Loam	ML, CL-ML	A-4	0	0	88-100	88-100	73-90
	5-15	Fine sandy loam, silt loam, gravelly loam	GP-GM, SC, CL	A-1-a, A-4	0	0	17-100	17-100	13-98
	15-24	Fine sandy loam, silt loam, gravelly loam	GP-GM, GC, CL	A-1-a, A-4	0	0	17-100	17-100	13-98
	24-80	Bedrock	---	---	---	---	---	---	---
624846 Arnot-----	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100
	1-2	Loam	CL-ML, ML	A-4, A-6	0	0	100	100	83-90
	2-3	Fine sandy loam	SM, CL, SC-SM	A-4, A-6	0	0	100	100	80-93
	3-4	Fine sandy loam	SM, CL, SC-SM	A-4, A-1-b, A-6	0	0	100	59-100	48-93
	4-12	Silt loam, very gravelly loam	CL, GP-GC, GC	A-1-a, A-6, A-2-4	0	0	14-100	14-100	11-93
	12-17	Silt loam, extremely gravelly loam	CL, GC, GP-GC	A-6, A-2-4, A-1-a	0	0	14-100	14-100	11-93
	17-80	Bedrock	---	---	---	---	---	---	---
626816 Udifulvents, occasionally flooded-----	0-3	Loamy sand	SM	A-2-4	0	0	100	100	74-84
	3-16	Loamy sand	SC-SM, SM	A-2-4	0	0	100	100	74-84
	16-22	Sandy loam	SM, SC-SM, SC	A-6, A-2-4, A-4	0	0	100	100	70-86
	22-27	Sandy loam	SM, SC-SM, SC	A-6, A-2-4, A-4	0	0	100	100	70-86
	27-32	Sandy loam	SM, SC-SM, SC	A-6, A-2-4, A-4	0	0	100	100	70-86
	32-60	Stratified loamy sand to sandy loam	SC-SM, SM	A-2-4	0	0	100	100	74-84

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas sieve number			
					Unified		AASHTO	>10 in		4	
								Pct	Pct		
635458 Oquaga, very rocky-----	In										
	0-1	Slightly decomposed plant material	PT				A-8	0	0	100	100
	1-4	Channery loam			SC-SM, ML		A-7-5, A-4	0	4-18	78-96	77-96
	4-20	Fine sandy loam, very channery loam, silt loam			CL, GC-GM, GM		A-6, A-1-b, A-4	0	18-36	44-78	43-77
	20-25	Fine sandy loam, sandy loam, extremely channery loam, silt loam			CL, GP-GM, GC-GM		A-6, A-2-4, A-1-a	0	23-46	14-70	12-70
	25-80	Bedrock			---		---	---	---	---	---
Lackawanna, very rocky-----	0-2	Slightly decomposed plant material	PT				A-8	0	0	100	100
	2-3	Cobbly fine sandy loam			GM, ML		A-2-4, A-4				
	3-7	Cobbly fine sandy loam			CL, SM, CL-ML		A-6, A-2-4, A-4	5-23	13-23	59-100	59-100
	7-8	Cobbly fine sandy loam			GM, ML		A-1-b, A-4	3-23	3-23	77-96	77-96
	8-16	Fine sandy loam, silt loam, stony loam			CL, GM, CL-ML		A-6, A-2-4, A-4	3-23	3-30	56-96	56-96
	16-24	Fine sandy loam, silt loam, stony loam			CL, GM, CL-ML		A-6, A-2-4, A-4	3-23	3-30	56-96	56-96
	24-29	Loam, sandy loam, stony fine sandy loam, silt loam			CL, SM, SC-SM		A-6, A-2-4, A-4	2-17	2-22	66-98	66-98
	29-60	Silt loam, loam, sandy loam, very cobbly fine sandy loam			CL, SM, GC-GM		A-6, A-4, A-2-4	2-17	2-22	66-98	66-98
635459 Oquaga, very rocky-----	0-1	Slightly decomposed plant material	PT				A-8	0	0	100	100
	1-4	Channery loam			SC-SM, ML		A-7-5, A-4	0	4-18	78-96	77-96
	4-20	Fine sandy loam, very channery loam, silt loam			CL, GC-GM, GM		A-6, A-1-b, A-4	0	18-36	44-78	43-77
	20-25	Fine sandy loam, sandy loam, extremely channery loam, silt loam			CL, GP-GM, GC-GM		A-6, A-2-4, A-1-a	0	23-46	14-70	12-70
	25-80	Bedrock			---		---	---	---	---	---



Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage passing sieve number			
			Unified	AASHTO	>10 in	3-10 in	Pct	4	10	40	
635459 Lackawanna, very rocky-----	In				Pct	Pct					
	0-2	Slightly decomposed plant material	PT	A-8	0	0	0	100	100	100	
	2-3	Cobbly fine sandy loam	GM, ML	A-2-4, A-4	5-23	13-23	13-23	59-100	59-100	48-100	
	3-7	Cobbly fine sandy loam	CL, SM, CL-ML	A-6, A-2-4, A-4	3-23	3-23	3-23	77-96	77-96	63-96	
	7-8	Cobbly fine sandy loam	GM, ML	A-1-b, A-4	3-23	3-30	3-30	56-96	56-96	46-96	
	8-16	Fine sandy loam, silt loam, stony loam	CL, GM, CL-ML	A-6, A-2-4, A-4	3-23	3-30	3-30	56-96	56-96	43-96	
	16-24	Fine sandy loam, silt loam, stony loam	CL, GM, CL-ML	A-6, A-2-4, A-4	3-23	3-30	3-30	56-96	56-96	43-96	
	24-29	Loam, sandy loam, stony fine sandy loam, silt loam	CL, SM, SC-SM	A-6, A-2-4, A-4	2-17	2-22	66-98	166-98	51-98	51-98	
	29-60	Silt loam, loam, sandy loam, very cobbly fine sandy loam	CL, SM, GC-GM	A-6, A-4, A-2-4	2-17	2-22	66-98	166-98	51-98	51-98	
740953 Delaware, rarely flooded-	0-1	Slightly decomposed plant material	PT	A-8	0	0	0	100	100	100	
	1-4	Fine sandy loam	CL-ML, SM	A-2-4, A-4	0	0	0	95-100	90-100	80-100	
	4-11	Fine sandy loam	SC-SM, SM	A-4, A-2-4	0	0	0	95-100	91-100	79-100	
	11-20	Fine sandy loam	SM, CL, SC-SM	A-2-4, A-4	0	0	0	95-100	91-100	81-100	
	20-33	Fine sandy loam	CL-ML, SM, ML	A-4	0	0	0	96-100	91-100	81-100	
	33-41	Fine sandy loam	CL-ML, SM	A-2-4, A-4	0	0	0	95-100	90-100	79-100	
	41-56	Loamy sand, loam, fine sandy loam	CL-ML, SM, CL	A-2-4, A-4	0	0	0	95-100	90-100	77-100	
	56-60	Loamy sand, fine sandy loam, loam	SM, CL, CL-ML	A-4	0	0	0	95-100	91-100	79-100	
740968 Nassau, very rocky-----	0-7	Very channery silt loam	ML, CL, GC	A-4	0	0-32	53-100	52-100	46-96	46-96	
	7-13	Loam, extremely channery silt loam	CL, GC-GM, GC	A-4, A-1-b, A-2-4	0	18-40	35-79	34-78	29-76	29-76	
	13-80	Bedrock	---	---	---	---	---	---	---	---	
Manlius, very rocky-----	0-9	Very channery silt loam	ML, GC	A-4	0	8-32	53-91	52-91	46-87	46-87	
	9-20	Loam, extremely channery silt loam	CL, GC-GM, GC	A-4, A-2-4, A-1-b	0	18-40	35-79	34-78	29-76	29-76	
	20-29	Loam, extremely channery silt loam	GC-GM, GC	A-4, A-1-b, A-2-4	0	31-39	37-57	35-56	30-55	30-55	
	29-80	Bedrock	---	---	---	---	---	---	---	---	

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas- sieve number		
			Unified	AASHTO	>10 in	3-10 in	Pct	4	10	40
740969 Nassau, very rocky-----	In				Pct					
	0-7	Very channery silt loam	ML, CL, GC	A-4	0	0-32	53-100	52-100	46-96	
	7-13	Loam, extremely channery silt loam	CL, GC-GM, GC	A-4, A-1-b, A-2-4	0	18-40	35-79	34-78	29-76	
	13-80	Bedrock	---	---	---	---	---	---	---	---
Manlius, very rocky-----	0-9	Very channery silt loam	ML, GC	A-4	0	8-32	53-91	52-91	46-87	46-96
	9-20	Loam, extremely channery silt loam	CL, GC-GM, GC	A-4, A-2-4, A-1-b	0	18-40	35-79	34-78	29-76	
	20-29	Loam, extremely channery silt loam	GC-GM, GC	A-4, A-1-b, A-2-4	0	31-39	37-57	35-56	30-55	
	29-80	Bedrock	---	---	---	---	---	---	---	---
740971 Oquaga, very rocky-----	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100	100
	1-4	Channery loam	SC-SM, ML	A-7-5, A-4	0	4-18	78-96	77-96	66-89	
	4-20	Fine sandy loam, very channery loam, silt loam	CL, GC-GM, GM	A-6, A-1-b, A-4	0	18-36	44-78	43-77	33-77	
	20-25	Fine sandy loam, sandy loam, extremely channery loam, silt loam	CL, GP-GM, GC-GM	A-6, A-2-4, A-1-a	0	23-46	14-70	12-70	9-70	
Lackawanna, very rocky-----	25-80	Bedrock	---	---	---	---	---	---	---	---
	0-2	Slightly decomposed plant material	PT	A-8	0	0	100	100	100	100
	2-3	Cobbly fine sandy loam	GM, ML	A-2-4, A-4	5-23	13-23	59-100	59-100	48-100	
	3-7	Cobbly fine sandy loam	CL, SM, CL-ML	A-6, A-2-4, A-4	3-23	3-23	77-96	77-96	63-96	
	7-8	Cobbly fine sandy loam	GM, ML	A-1-b, A-4	3-23	3-30	56-96	56-96	46-96	
	8-16	Fine sandy loam, silt loam, stony loam	CL, GM, CL-ML	A-6, A-2-4, A-4	3-23	3-30	56-96	56-96	43-96	
	16-24	Fine sandy loam, silt loam, stony loam	CL, GM, CL-ML	A-6, A-2-4, A-4	3-23	3-30	56-96	56-96	43-96	
	24-29	Loam, sandy loam, stony fine sandy loam, silt loam	CL, SM, SC-SM	A-6, A-2-4, A-4	2-17	2-22	66-98	66-98	51-98	
	29-60	Silt loam, loam, sandy loam, very cobbly fine sandy loam	CL, SM, GC-GM	A-6, A-4, A-2-4	2-17	2-22	66-98	66-98	51-98	

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas sieve number		
			Unified	AASHTO	>10 in	3-10 in	Pct	4	10	40
740972 Oquaga, very rocky-----	In				Pct	Pct				
	0-1	Slightly decomposed plant material	PT	A-8	0	0	0	100	100	100
	1-4	Channery loam	SC-SM, ML	A-7-5, A-4	0	4-18	78-96	77-96	77-96	66-89
	4-20	Fine sandy loam, very channery loam, silt loam	CL, GC-GM, GM	A-6, A-1-b, A-4	0	18-36	44-78	43-77	43-77	33-77
	20-25	Fine sandy loam, sandy loam, extremely channery loam, silt loam	CL, GP-GM, GC-GM	A-6, A-2-4, A-1-a	0	23-46	14-70	12-70	12-70	9-70
	25-80	Bedrock	---	---	---	---	---	---	---	---
Lackawanna, very rocky-----	0-2	Slightly decomposed plant material	PT	A-8	0	0	100	100	100	100
	2-3	Cobbly fine sandy loam	GM, ML	A-2-4, A-4	5-23	13-23	59-100	59-100	48-100	48-100
	3-7	Cobbly fine sandy loam	CL, SM, CL-ML	A-6, A-2-4, A-4	3-23	3-23	77-96	77-96	63-96	63-96
	7-8	Cobbly fine sandy loam	GM, ML	A-1-b, A-4	3-23	3-30	56-96	56-96	46-96	46-96
	8-16	Fine sandy loam, silt loam, stony loam	CL, GM, CL-ML	A-6, A-2-4, A-4	3-23	3-30	56-96	56-96	43-96	43-96
	16-24	Fine sandy loam, silt loam, stony loam	CL, GM, CL-ML	A-6, A-2-4, A-4	3-23	3-30	56-96	56-96	43-96	43-96
	24-29	Loam, sandy loam, stony fine sandy loam, silt loam	CL, SM, SC-SM	A-6, A-2-4, A-4	2-17	2-22	66-98	66-98	51-98	51-98
740974 Oquaga-----	29-60	Silt loam, loam, sandy loam, very cobbly fine sandy loam	CL, SM, GC-GM	A-6, A-4, A-2-4	2-17	2-22	66-98	66-98	51-98	51-98
	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100	100
	1-4	Channery loam	SC-SM, ML	A-7-5, A-4	0	4-18	78-96	77-96	77-96	66-89
	4-20	Fine sandy loam, very channery loam, silt loam	CL, GC-GM, GM	A-6, A-1-b, A-4	0	18-36	44-78	43-77	43-77	33-77
	20-25	Fine sandy loam, sandy loam, extremely channery loam, silt loam	CL, GP-GM, GC-GM	A-6, A-2-4, A-1-a	0	23-46	14-70	12-70	12-70	9-70
	25-80	Bedrock	---	---	---	---	---	---	---	---

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas- sieve number			
			Unified	AASHTO	>10 in	3-10 in	Pct	4	10	40	
740975 Arnot-----	In				Pct	Pct					
	0-1	Slightly decomposed plant material	PT	A-8	0	0	0	100	100	100	
	1-2	Loam	CL-ML, ML	A-4, A-6	0	0	0	100	100	83-90	
	2-3	Fine sandy loam	SM, CL, SC-SM	A-4, A-6	0	0	0	100	100	80-93	
	3-4	Fine sandy loam	SM, CL, SC-SM	A-4, A-1-b, A-6	0	0	0	100	59-100	48-93	
	4-12	Silt loam, very gravelly loam	CL, GP-GC, GC	A-1-a, A-6, A-2-4	0	0	0	14-100	14-100	11-93	
	12-17	Silt loam, extremely gravelly loam	CL, GC, GP-GC	A-6, A-2-4, A-1-a	0	0	0	14-100	14-100	11-93	
	17-80	Bedrock	---	---	---	---	---	---	---	---	
740987 Scio-----	0-6	Silt loam	ML, CL	A-7-5, A-4	0	0	0	100	100	89-96	
	6-13	Silt loam	ML, CL	A-7-5, A-4	0	0	0	100	100	89-96	
	13-23	Very fine sandy loam, silt loam	ML, CL	A-6, A-4	0	0	0	100	100	82-10	
	23-28	Very fine sandy loam, silt loam	ML, CL	A-6, A-4	0	0	0	100	100	82-10	
	28-50	Very fine sandy loam, silt loam	ML, CL	A-6, A-4	0	0	0	100	100	82-10	
	50-59	Very fine sandy loam, silt loam	ML, CL	A-6, A-4	0	0	0	100	100	82-10	
	59-72	Very fine sandy loam, silt loam	ML, CL	A-6, A-4	0	0	0	100	100	82-10	
740988 Udifulvents, occasionally flooded-----	0-3	Loamy sand	SM	A-2-4	0	0	0	100	100	74-84	
	3-16	Loamy sand	SC-SM, SM	A-2-4	0	0	0	100	100	74-84	
	16-22	Sandy loam	SM, SC-SM, SC	A-6, A-2-4, A-4	0	0	0	100	100	70-86	
	22-27	Sandy loam	SM, SC-SM, SC	A-6, A-2-4, A-4	0	0	0	100	100	70-86	
	27-32	Sandy loam	SM, SC-SM, SC	A-6, A-2-4, A-4	0	0	0	100	100	70-86	
	32-60	Stratified loamy sand to sandy loam	SC-SM, SM	A-2-4	0	0	0	100	100	74-84	

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas sieve number		
			Unified	AASHTO	>10 in	3-10 in	Pct	4	10	40
740991	In				Pct	Pct				
Unadilla-----	0-8	Silt loam	ML, CL	A-4						
	8-14	Silt loam	ML, CL	A-4	0	0		100	95-100	84-96
	14-25	Very fine sandy loam,	ML, CL	A-4	0	0		100	91-100	74-10
		loam, silt loam			0	0		100	91-100	74-10
	25-39	Very fine sandy loam,	ML, CL	A-4						
		loam, silt loam			0	0		100	91-100	74-10
740992	39-60	Fine sandy loam, loamy	SM, ML, CL	A-4	0	0		100	75-100	64-10
		very fine sand, very								
		fine sandy loam, silt								
		loam								
Unadilla-----	0-8	Silt loam	ML, CL	A-4						
	8-14	Silt loam	ML, CL	A-4	0	0		100	95-100	84-96
	14-25	Very fine sandy loam,	ML, CL	A-4	0	0		100	91-100	74-10
		loam, silt loam			0	0		100	91-100	74-10
	25-39	Very fine sandy loam,	ML, CL	A-4						
		loam, silt loam			0	0		100	91-100	74-10
740995	39-60	Fine sandy loam, loamy	SM, ML, CL	A-4	0	0		100	75-100	64-10
		very fine sand, very								
		fine sandy loam, silt								
		loam								
Wellisboro, extremely stony	0-8	Silt loam	ML, CL	A-4						
	8-15	Loam, cobbly silt loam	CL-ML, CL	A-4	0	10-15		91-97	91-97	76-88
	15-24	Silt loam, cobbly loam	CL, GC-GM,	A-4	0	2-26		75-93	75-93	60-87
			CL-ML		0	3-30		71-91	71-91	58-88
	24-29	Silt loam, cobbly loam	CL, GC-GM,	A-4	0	3-30		63-91	63-91	52-88
			CL-ML							
740996	29-37	Loam, silt loam, cobbly	CL, SC-SM	A-4, A-1-b,	0	5-28		63-98	63-98	41-86
		sandy loam		A-2-4						
	37-60	Loam, silt loam, cobbly	CL, SC-SM	A-4, A-1-b,	0	5-28		63-98	63-98	41-86
		sandy loam		A-2-4						

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas- sieve number		
					>10 in	3-10 in	Pct	4	10	40
			Unified	AASHTO						
740996 Wellsboro, extremely stony	In				Pct					
	0-8	Silt loam	ML, CL	A-4	0	10-15	91-97	91-97	91-97	76-88
	8-15	Loam, cobbly silt loam	CL-ML, CL	A-4	0	2-26	75-93	75-93	75-93	60-87
	15-24	Silt loam, cobbly loam	CL, GC-GM, CL-ML	A-4	0	3-30	71-91	71-91	71-91	58-88
	24-29	Silt loam, cobbly loam	CL, GC-GM, CL-ML	A-4	0	3-30	63-91	63-91	63-91	52-88
	29-37	Loam, silt loam, cobbly sandy loam	CL, SC-SM	A-4, A-1-b, A-2-4	0	5-28	63-98	63-98	63-98	41-86
	37-60	Loam, silt loam, cobbly sandy loam	CL, SC-SM	A-4, A-1-b, A-2-4	0	5-28	63-98	63-98	63-98	41-86
741149 Lackawanna, extremely stony	0-2	Slightly decomposed plant material	PT	A-8	0	0	100	100	100	100
	2-3	Cobbly fine sandy loam	GM, ML	A-2-4, A-4	5-23	13-23	59-100	59-100	59-100	48-100
	3-7	Cobbly fine sandy loam	CL, SM, CL-ML	A-6, A-2-4, A-4	3-23	3-23	77-96	77-96	77-96	63-96
	7-8	Cobbly fine sandy loam	GM, ML	A-1-b, A-4	3-23	3-30	56-96	56-96	56-96	46-96
	8-16	Fine sandy loam, silt loam, stony loam	CL, GM, CL-ML	A-6, A-2-4, A-4	3-23	3-30	56-96	56-96	56-96	43-96
	16-24	Fine sandy loam, silt loam, stony loam	CL, GM, CL-ML	A-6, A-2-4, A-4	3-23	3-30	56-96	56-96	56-96	43-96
	24-29	Loam, sandy loam, stony fine sandy loam, silt loam	CL, SM, SC-SM	A-6, A-2-4, A-4	2-17	2-22	66-98	66-98	66-98	51-98
	29-60	Silt loam, loam, sandy loam, very cobbly fine sandy loam	CL, SM, GC-GM	A-6, A-4, A-2-4	2-17	2-22	66-98	66-98	66-98	51-98

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas sieve number		
			Unified	AASHTO	>10 in	3-10 in	Pct	4	10	40
741150 Lackawanna, extremely stony	In				Pct	Pct				
	0-2	Slightly decomposed plant material	PT	A-8	0	0	100	100	100	100
	2-3	Cobbly fine sandy loam	GM, ML	A-2-4, A-4	5-23	13-23	59-100	59-100	48-100	48-100
	3-7	Cobbly fine sandy loam	CL, SM, CL-ML	A-6, A-2-4, A-4	3-23	3-23	77-96	77-96	77-96	63-96
	7-8	Cobbly fine sandy loam	GM, ML	A-1-b, A-4	3-23	3-30	56-96	56-96	56-96	46-96
	8-16	Fine sandy loam, silt loam, stony loam	CL, GM, CL-ML	A-6, A-2-4, A-4	3-23	3-30	56-96	56-96	56-96	43-96
	16-24	Fine sandy loam, silt loam, stony loam	CL, GM, CL-ML	A-6, A-2-4, A-4	3-23	3-30	56-96	56-96	56-96	43-96
	24-29	Loam, stony loam, stony fine sandy loam, silt loam	CL, SM, SC-SM	A-6, A-2-4, A-4	2-17	2-22	66-98	66-98	66-98	51-98
	29-60	Silt loam, loam, sandy loam, very cobbly fine sandy loam	CL, SM, GC-GM	A-6, A-4, A-2-4	2-17	2-22	66-98	66-98	66-98	51-98
801114 Oquaga-----	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100	100
	1-4	Channery loam	SC-SM, ML	A-7-5, A-4	0	4-18	78-96	77-96	77-96	66-89
	4-20	Fine sandy loam, very channery loam, silt loam	CL, GC-GM, GM	A-6, A-1-b, A-4	0	18-36	44-78	43-77	43-77	33-77
	20-25	Fine sandy loam, sandy loam, extremely channery loam, silt loam	CL, GP-GM, GC-GM	A-6, A-2-4, A-1-a	0	23-46	14-70	12-70	12-70	9-70
	25-80	Bedrock	---	---	---	---	---	---	---	---
	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100	100
	1-4	Channery loam	SC-SM, ML	A-7-5, A-4	0	4-18	78-96	77-96	77-96	66-89
	4-20	Fine sandy loam, very channery loam, silt loam	CL, GC-GM, GM	A-6, A-1-b, A-4	0	18-36	44-78	43-77	43-77	33-77
	20-25	Fine sandy loam, sandy loam, extremely channery loam, silt loam	CL, GP-GM, GC-GM	A-6, A-2-4, A-1-a	0	23-46	14-70	12-70	12-70	9-70
810906 Oquaga-----	25-80	Bedrock	---	---	---	---	---	---	---	---
	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100	100
	1-4	Channery loam	SC-SM, ML	A-7-5, A-4	0	4-18	78-96	77-96	77-96	66-89
	4-20	Fine sandy loam, very channery loam, silt loam	CL, GC-GM, GM	A-6, A-1-b, A-4	0	18-36	44-78	43-77	43-77	33-77
	20-25	Fine sandy loam, sandy loam, extremely channery loam, silt loam	CL, GP-GM, GC-GM	A-6, A-2-4, A-1-a	0	23-46	14-70	12-70	12-70	9-70
	25-80	Bedrock	---	---	---	---	---	---	---	---
	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100	100
	1-4	Channery loam	SC-SM, ML	A-7-5, A-4	0	4-18	78-96	77-96	77-96	66-89

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number			
			Unified	AASHTO	>10	3-10	4	10	40	
					in	in				
1147465 Alden, extremely stony	In				Pct	Pct				
	0-2	Slightly decomposed plant material	PT		0	0	100	100	100	
	2-7	Silt loam	OH, ML		0	0	100	75-100	69-95	
	7-14	Loam, silty clay loam, silt loam, very fine sandy loam	CL, ML		0	0	79-100	79-100	64-100	
	14-28	Very fine sandy loam, silt loam, silty clay loam, loam	CL, ML		0	0	80-100	80-100	69-100	
	28-43	Very fine sandy loam, silt loam, loam, silty clay loam	SM, CL		0	0	79-100	79-100	61-100	
	43-60	Silty clay loam, fine sandy loam, silt loam, loam	GC-GM, CL		0	0	56-93	56-93	45-93	
1147467 Arnot, very rocky-----	0-1	Slightly decomposed plant material	PT		0	0	100	100	100	
	1-2	Loam	CL-ML, ML		0	0	100	100	83-900	
	2-3	Fine sandy loam	SM, CL, SC-SM	A-4, A-6	0	0	100	100	80-93	
	3-4	Fine sandy loam	SM, CL, SC-SM	A-4, A-1-b, A-6	0	0	100	59-100	48-93	
	4-12	Silt loam, very gravelly loam	CL, GP-GC, GC	A-1-a, A-6, A-2-4	0	0	14-100	14-100	11-93	
	12-17	Silt loam, extremely gravelly loam	CL, GC, GP-GC	A-1-a, A-6, A-2-4	0	0	14-100	14-100	11-93	
	17-80	Bedrock	---	---	---	---	---	---	---	
Lordstown, very rocky-----	0-1	Slightly decomposed plant material	PT		0	0	100	100	100	
	1-2	Loam	CL, SC-SM, ML	A-7-5, A-4	0	0	100	82-100	68-900	
	2-3	Fine sandy loam	SM, CL, SC-SM	A-4, A-6	0	0	100	100	80-93	
	3-5	Silt loam, loam	GC-GM, CL	A-2-4, A-4, A-6	0	0	47-100	47-100	38-93	
	5-17	Silt loam, gravelly loam	CL, GW, GC	A-6, A-1-a, A-4	0	0	4-100	4-100	3-93	
	17-22	Silt loam, gravelly loam	CL, GW, GC	A-1-a, A-6, A-4	0	0	4-100	4-100	3-93	
	22-36	Silt loam, loam, very gravelly fine sandy loam	GW, CL, GC-GM	A-6, A-2-4, A-1-a	0	0	4-100	4-100	3-98	
	36-80	Bedrock	---	---	---	---	---	---	---	



Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas sieve number		
			Unified	AASHTO	>10 in	3-10 in		4	10	40
1147468 Anot-----	In				Pct	Pct				
	0-1	Slightly decomposed plant material	PT	A-8	0	0		100	100	100
	1-2	Loam	CL-ML, ML	A-4, A-6	0	0		100	100	83-90
	2-3	Fine sandy loam	SM, CL, SC-SM	A-4, A-6	0	0		100	100	80-93
	3-4	Fine sandy loam	SM, CL, SC-SM	A-4, A-1-b, A-6	0	0		100	59-100	48-93
	4-12	Silt loam, very gravelly loam	CL, GP-GC, GC	A-1-a, A-6, A-2-4	0	0		14-100	14-100	11-93
	12-17	Silt loam, extremely gravelly loam	CL, GC, GP-GC	A-6, A-2-4, A-1-a	0	0		14-100	14-100	11-93
	17-80	Bedrock	---	---	---	---		---	---	---
	0-1	Slightly decomposed plant material	PT	A-8	0	0		100	100	100
	1-2	Loam	CL, SC-SM, ML	A-7-5, A-4	0	0		100	82-100	68-90
Lordstown-----	2-3	Fine sandy loam	SM, CL, SC-SM	A-4, A-6	0	0		100	100	80-93
	3-5	Silt loam, loam	GC-GM, CL	A-2-4, A-4, A-6	0	0		47-100	47-100	38-93
	5-17	Silt loam, gravelly loam	CL, GW, GC	A-6, A-1-a, A-4	0	0		4-100	4-100	3-93
	17-22	Silt loam, gravelly loam	CL, GW, GC	A-1-a, A-6, A-4	0	0		4-100	4-100	3-93
	22-36	Silt loam, loam, very gravelly fine sandy loam	GW, CL, GC-GM	A-6, A-2-4, A-1-a	0	0		4-100	4-100	3-98
	36-80	Bedrock	---	---	---	---		---	---	---
	0-1	Slightly decomposed plant material	PT	A-8	0	0		100	100	100
	1-2	Loam	CL-ML, ML	A-4, A-6	0	0		100	100	83-90
	2-3	Fine sandy loam	SM, CL, SC-SM	A-4, A-6	0	0		100	100	80-93
	3-4	Fine sandy loam	SM, CL, SC-SM	A-4, A-1-b, A-6	0	0		100	59-100	48-93
1147469 Anot-----	4-12	Silt loam, very gravelly loam	CL, GP-GC, GC	A-1-a, A-6, A-2-4	0	0		14-100	14-100	11-93
	12-17	Silt loam, extremely gravelly loam	CL, GC, GP-GC	A-6, A-2-4, A-1-a	0	0		14-100	14-100	11-93
	17-80	Bedrock	---	---	---	---		---	---	---
	0-1	Slightly decomposed plant material	PT	A-8	0	0		100	100	100
	1-2	Loam	CL-ML, ML	A-4, A-6	0	0		100	100	83-90
	2-3	Fine sandy loam	SM, CL, SC-SM	A-4, A-6	0	0		100	100	80-93
	3-4	Fine sandy loam	SM, CL, SC-SM	A-4, A-1-b, A-6	0	0		100	59-100	48-93
	4-12	Silt loam, very gravelly loam	CL, GP-GC, GC	A-1-a, A-6, A-2-4	0	0		14-100	14-100	11-93
	12-17	Silt loam, extremely gravelly loam	CL, GC, GP-GC	A-6, A-2-4, A-1-a	0	0		14-100	14-100	11-93
	17-80	Bedrock	---	---	---	---		---	---	---

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pas- sieve number				
			Unified	AASHTO	>10 in	3-10 in	4	10	40		
1147469	In				Pct	Pct					
Lordstown-----	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100		
	1-2	Loam			0	0					
	2-3	Fine sandy loam		CL, SC-SM, ML A-7-5, A-4	0	0	100	82-100	68-90		
	3-5	Silt loam, loam		SM, CL, SC-SM A-4, A-6	0	0	100	100	80-93		
				GC-GM, CL A-2-4, A-4, A-6	0	0	47-100	47-100	38-93		
	5-17	Silt loam, gravelly loam	CL, GW, GC	A-6, A-1-a, A-4	0	0	4-100	4-100	3-93		
	17-22	Silt loam, gravelly loam	CL, GW, GC	A-1-a, A-6, A-4	0	0	4-100	4-100	3-93		
	22-36	Silt loam, loam, very gravelly fine sandy loam	GW, CL, GC-GM	A-6, A-2-4, A-1-a	0	0	4-100	4-100	3-98		
	36-80	Bedrock	---	---	---	---	---	---	---		
1147470											
Atherton, very poorly drained-	0-2	Slightly decomposed plant material	PT	A-8	0	0	100	100	100		
	2-4	Moderately decomposed plant material	PT	A-8	0	0	100	100	100		
	4-8	Mucky silt loam	OH	A-7-5	0	0	100	75-100	70-96		
	8-10	Loam, silt loam, fine sandy loam, silty clay loam, very fine sandy loam	MH, SM, CL	A-7-5, A-6, A-4	0	0	100	76-100	61-10		
	10-18	Loam, silt loam, fine sandy loam, silty clay loam, very fine sandy loam	SM, CL	A-7-6, A-6, A-4	0	0	100	78-100	62-10		
	18-29	Loam, silt loam, fine sandy loam, silty clay loam, very fine sandy loam	SM, CL	A-7-6, A-6, A-4	0	0	100	78-100	62-10		
	29-32	Loam, silt loam, fine sandy loam, silty clay loam, very fine sandy loam	SM, CL	A-7-6, A-6, A-4	0	0	100	78-100	62-10		
	32-41	Loam, silt loam, fine sandy loam, silty clay loam, very fine sandy loam	SM, CL	A-7-6, A-6, A-4	0	0	100	78-100	62-10		
	41-45	Loam, fine sandy loam, very fine sandy loam, silt loam, silty clay loam	CL, SM, SC-SM	A-7-6, A-2-4, A-4	0	0	100	75-100	56-10		

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas sieve number		
			Unified	AASHTO	>10 in	3-10 in	Pct	4	10	40
1147470	In				Pct	Pct				
Atherton, very poorly drained-	45-50	Fine sandy loam, loam, very fine sandy loam, silt loam, silty clay loam	SM, CL	A-7-6, A-6, A-4	0	0	0	100	75-100	56-100
	50-60	Loam, very fine sandy loam, fine sandy loam, silt loam, silty clay loam	CL, SM, SC-SM	A-7-6, A-2-4, A-4	0	0	0	100	75-100	56-100
	60-70	Loam, fine sandy loam, very fine sandy loam, silt loam, silty clay loam	CL, SM, SC-SM	A-7-6, A-2-4, A-4	0	0	0	100	75-100	56-100
Atherton, poorly drained-	0-6	Loam	OH, ML	A-6, A-7-5	0	0	0	100	73-100	68-98
	6-12	Loam, silty clay loam, fine sandy loam, silt loam, very fine sandy loam	SC-SM, CL	A-6, A-7-6, A-4	0	0	0	100	75-100	61-100
	12-30	Fine sandy loam, loam, very fine sandy loam, silt loam, silty clay loam	SC-SM, CL	A-6, A-7-6, A-4	0	0	0	100	75-100	61-100
	30-40	Fine sandy loam, loam, sandy clay loam, silt loam, silty clay loam, very fine sandy loam	SC-SM, CL	A-7-6, A-2-4, A-6	0	0	0	100	77-100	62-100
1147471	40-60	Fine sandy loam, loam, sandy clay loam, silt loam, silty clay loam, very fine sandy loam	SC-SM, CL	A-7-6, A-2-4, A-6	0	0	0	100	77-100	62-100
Catden-----	0-2	Mucky peat	PT	A-8	0	0	0	100	100	100
	2-13	Muck	PT	A-8	0	0	0	100	100	100
	13-20	Woody muck	PT	A-8	0	0	0	100	100	100
	20-32	Muck	PT	A-8	0	0	0	100	100	100
	32-60	Muck	PT	A-8	0	0	0	100	100	100

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pass sieve number			
			Unified	AASHTO	>10 in	3-10 in	4	10	40	
1147474 Chippewa, extremely stony	In				Pct	Pct				
	0-2	Slightly decomposed plant material	PT	A-8	0	0	100	100	100	
	2-4	Silt loam	CL	A-6	0	0	100	100	91-10	
	4-8	Silty clay loam, loam, silt loam	CL	A-7-6, A-6	0	0	96-100	96-100	83-99	
	8-13	Silty clay loam, clay loam, silt loam, loam	CL	A-7-6, A-6	0	0	92-100	92-100	79-99	
	13-21	Loam, silty clay loam, fine sandy loam, silt loam, clay loam	CL, CL-ML	A-4, A-7-6, A-6	0	0	93-100	93-100	75-10	
	21-29	Silty clay loam, clay loam, loam, silt loam, fine sandy loam	CL, CL-ML	A-4, A-7-6, A-6	0	0	93-100	93-100	75-10	
	29-34	Loam, silty clay loam, fine sandy loam, silt loam, clay loam	GC-GM, CL	A-2-4, A-7-6, A-6	0	0	46-100	46-100	37-10	
	34-60	Loam, silty clay loam, silt loam, fine sandy loam, clay loam	CL, SM, SC-SM	A-1-a, A-7-6, A-4	0	0	100	40-100	30-10	
1147475 Colonie-----	0-2	Loamy fine sand	SM	A-4						
	2-11	Loamy fine sand	SM	A-4	0	0	95-100	90-100	88-10	
	11-24	Loamy fine sand, fine sand	SM, SP-SM	A-2-4, A-3	0	0	96-100	91-100	71-10	
	24-40	Loamy fine sand, fine sandy loam, fine sand	SM, SP-SM	A-2-4, A-3	0	0	96-100	91-100	71-10	
	40-62	Loamy fine sand, fine sandy loam, fine sand	SM, SP-SM	A-2-4, A-3	0	0	96-100	91-100	71-10	
1147478 Delaware, rarely flooded-	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100	
	1-4	Fine sandy loam	CL-ML, SM	A-2-4, A-4	0	0	95-100	90-100	80-10	
	4-11	Fine sandy loam	SC-SM, SM	A-4, A-2-4	0	0	95-100	91-100	79-10	
	11-20	Fine sandy loam	SM, SC-SM, CL	A-2-4, A-4	0	0	95-100	91-100	81-10	
	20-33	Fine sandy loam	CL-ML, SM, ML	A-4	0	0	96-100	91-100	81-10	
	33-41	Fine sandy loam	CL-ML, SM	A-2-4, A-4	0	0	95-100	90-100	79-10	
	41-56	Loamy sand, loam, fine sandy loam	CL-ML, SM, CL	A-2-4, A-4	0	0	95-100	90-100	77-10	
	56-60	Loamy sand, fine sandy loam, loam	SM, CL, CL-ML	A-4	0	0	95-100	91-100	79-10	

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number		
			Unified	AASHTO	>10 in	3-10 in	4	10	40
1147482 Fredon, very stony-----	In				Pct	Pct			
	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100
	1-8	Silt loam	ML, CL	A-4	0	0	85-100	85-100	75-96
	8-14	Fine sandy loam, very fine sandy loam, silt loam, loam	CL, ML	A-4	0	0	100	86-100	68-100
	14-18	Fine sandy loam, very fine sandy loam, loam, silt loam	SM, CL	A-4	0	0	86-100	86-100	64-100
	18-23	Fine sandy loam, very fine sandy loam, loam, silt loam	SM, CL	A-4	0	0	86-100	86-100	64-100
	23-31	Loamy fine sand, loamy sand, sand, extremely gravelly loamy coarse sand, coarse sand	SP, SP-SM	A-1-b, A-1-a	0	0	77-87	21-49	10-34
	31-36	Loamy fine sand, loamy sand, sand, extremely gravelly coarse sand, loamy coarse sand	SP-SM, SP	A-1-a	0	0	78-87	21-49	8-30
	36-45	Loamy fine sand, loamy sand, sand, very gravelly coarse sand, loamy coarse sand	SP, SP-SM, SW	A-1-a	0	0	68-87	14-49	5-30
	45-55	Loamy fine sand, loamy sand, sand, extremely gravelly coarse sand, loamy coarse sand	SP, SP-SM, SW	A-1-a	0	0	65-87	14-49	5-30
	55-60	Loamy fine sand, loamy sand, sand, very gravelly coarse sand, loamy coarse sand	SP, SP-SM, SW	A-1-a	0	0	78-88	21-49	8-30

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pas- sieve number					
			Unified	AASHTO	>10 in	3-10 in	4	10	40			
1147482 Halsey, very stony-----	In					Pct	Pct					
	0-1	Slightly decomposed plant material	PT		A-8	0	0	100	100	100	100	100
	1-5	Silt loam	ML, CL		A-4	0	0	100	92-100	82-96	82-96	82-96
	5-11	Silt loam	ML, CL		A-4	0	0	100	92-100	82-96	82-96	82-96
	11-20	Loam, very fine sandy loam, silt loam, fine sandy loam	ML, CL		A-4	0	0	100	86-100	68-10	68-10	68-10
	20-25	Sand, loamy fine sand, coarse sand, loamy sand, loamy coarse sand	SP-SM, SM		A-1-b, A-2-4	0	0	100	54-92	32-76	32-76	32-76
	25-35	Sand, loamy fine sand, loamy coarse sand, very gravelly coarse sand, loamy sand	SM, SW		A-1-b, A-1-a	0	0	66-85	25-78	10-48	10-48	10-48
	35-49	Sand, loamy fine sand, loamy coarse sand, very gravelly coarse sand, loamy sand	SP-SM, SW		A-1-b, A-1-a	0	0	60-70	25-60	10-37	10-37	10-37
	49-56	Sand, loamy fine sand, loamy coarse sand, extremely gravelly coarse sand, loamy sand	SP-SM, SW, SP		A-1-b, A-1-a	0	0	60-66	25-60	10-37	10-37	10-37
	56-60	Sand, loamy fine sand, loamy coarse sand, extremely gravelly coarse sand, loamy sand	SP-SM, GP		A-1-b, A-1-a	0	0	43-66	25-60	10-37	10-37	10-37
1147485 Hazen, very stony-----	0-1	Slightly decomposed plant material	PT		A-8	0	0	100	100	100	100	100
	1-10	Loam	ML, SC-SM, CL		A-6, A-4	0	0	86-100	86-100	71-90	71-90	71-90
	10-18	Sandy loam, coarse sandy loam	SC, SC-SM, SM		A-4, A-1-b, A-2-4	0	0	72-100	72-100	50-79	50-79	50-79
	18-29	Sand, loamy sand, very stony loamy coarse sand, coarse sand	SC-SM, GP, SM		A-2-4, A-1-a, A-1-b	0-61	0-51	14-92	14-92	6-64	6-64	6-64
	29-41	Sand, loamy sand, very gravelly coarse sand, loamy coarse sand	SP-SC, GP, SP		A-1-b, A-1-a	0-61	0-51	37-79	5-66	2-40	2-40	2-40
	41-60	Sand, loamy sand, extremely gravelly coarse sand, loamy coarse sand	SP-SC, GP		A-1-b, A-1-a	0-61	0-51	37-79	5-66	2-40	2-40	2-40

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas sieve number		
			Unified	AASHTO	>10 in	3-10 in	Pct	4	10	40
1147485	In				Pct	Pct				
Hoosic, very stony-----	0-1	Slightly decomposed plant material	PT	A-8	0	0	0	100	100	100
	1-9	Gravelly loam	ML, GC, GC-GM	A-6, A-4, A-2-4	0	0	0	57-97	45-97	37-87
	9-21	Loam, sandy loam, very gravelly coarse sandy loam	SC, GP, GM	A-6, A-1-a	0	0-21	0	38-85	7-85	4-61
	21-27	Sand, coarse sand, extremely gravelly loamy coarse sand, loamy sand	SC-SM, GP, GP-GM	A-2-4, A-1-b, A-1-a	0	0-51	0	41-85	6-78	3-54
	27-37	Loamy sand, sand, extremely gravelly coarse sand, loamy coarse sand	SC-SM, GP	A-1-b, A-1-a	0-14	0-51	0	37-85	6-78	2-48
	37-49	Loamy sand, sand, extremely gravelly coarse sand, loamy coarse sand	SC-SM, GP, SP	A-1-b, A-1-a	0	0-51	0	41-85	6-78	2-48
	49-60	Loamy sand, sand, extremely gravelly coarse sand, loamy coarse sand	GP, SC-SM, SW	A-1-b, A-1-a	0-14	0-51	0	41-85	6-78	2-48

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number		
			Unified	AASHTO	>10 in	3-10 in	4	10	40
1147490 Hoosic, very stony-----	In				Pct	Pct			
	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100
	1-9	Gravelly loam	ML, GC, GC-GM	A-6, A-4, A-2-4	0	0	57-97	45-97	37-87
	9-21	Loam, sandy loam, very gravelly coarse sandy loam	SC, GP, GM	A-6, A-1-a	0	0-21	38-85	7-85	4-61
	21-27	Sand, coarse sand, extremely gravelly loamy coarse sand, loamy sand	SC-SM, GP, GP-GM	A-2-4, A-1-b, A-1-a	0	0-51	41-85	6-78	3-54
	27-37	Loamy sand, sand, extremely gravelly coarse sand, loamy coarse sand	SC-SM, GP	A-1-b, A-1-a	0-14	0-51	37-85	6-78	2-48
	37-49	Loamy sand, sand, extremely gravelly coarse sand, loamy coarse sand	SC-SM, GP, SP	A-1-b, A-1-a	0	0-51	41-85	6-78	2-48
	49-60	Loamy sand, sand, extremely gravelly coarse sand, loamy coarse sand	GP, SC-SM, SW	A-1-b, A-1-a	0-14	0-51	41-85	6-78	2-48
	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100
	1-10	Loam	ML, SC-SM, CL	A-6, A-4	0	0	86-100	86-100	71-90
Hazen, very stony-----	10-18	Sandy loam, coarse sandy loam	SC, SC-SM, SM	A-4, A-1-b, A-2-4	0	0	72-100	72-100	50-79
	18-29	Sand, loamy sand, very stony loamy coarse sand, coarse sand	SC-SM, GP, SM	A-2-4, A-1-a, A-1-b	0-61	0-51	14-92	14-92	6-64
	29-41	Sand, loamy sand, very gravelly coarse sand, loamy coarse sand	SP-SC, GP, SP	A-1-b, A-1-a	0-61	0-51	37-79	5-66	2-40
	41-60	Sand, loamy sand, extremely gravelly coarse sand, loamy coarse sand	SP-SC, GP	A-1-b, A-1-a	0-61	0-51	37-79	5-66	2-40



Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pass sieve number		
								4	10	40
			Unified	AASHTO	>10 in	3-10 in				
1147491 Hoosic, very stony-----	In				Pct	Pct				
	0-1	Slightly decomposed plant material	PT	A-8		0	0	100	100	100
	1-9	Gravelly loam	ML, GC, GC-GM	A-6, A-4, A-2-4		0	0	57-97	45-97	37-87
	9-21	Loam, sandy loam, very gravelly coarse sandy loam	SC, GP, GM	A-6, A-1-a		0	0-21	38-85	7-85	4-61
	21-27	Sand, coarse sand, extremely gravelly loamy coarse sand, loamy sand	SC-SM, GP, GP-GM	A-2-4, A-1-b, A-1-a		0	0-51	41-85	6-78	3-54
	27-37	Loamy sand, sand, extremely gravelly coarse sand, loamy coarse sand	SC-SM, GP	A-1-b, A-1-a		0-14	0-51	37-85	6-78	2-48
	37-49	Loamy sand, sand, extremely gravelly coarse sand, loamy coarse sand	SC-SM, GP, SP	A-1-b, A-1-a		0	0-51	41-85	6-78	2-48
	49-60	Loamy sand, sand, extremely gravelly coarse sand, loamy coarse sand	GP, SC-SM, SW	A-1-b, A-1-a		0-14	0-51	41-85	6-78	2-48

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage passing sieve number			
					Unified	AASHTO	>10 in	3-10 in	4	10	40
1147491	In						Pct	Pct			
Otisville, very stony-----	0-1	Slightly decomposed plant material	PT		A-8		0	0	100	100	100
	1-2	Gravelly sandy loam	SC-SM, SM		A-2-4, A-1-b		0	0	64-92	51-84	37-66
	2-7	Sand, loamy fine sand, coarse sand, very gravelly loamy sand, loamy coarse sand	SM, SP-SM, SW-SM		A-1-b, A-1-a		0	0-7	60-73	41-60	25-49
	7-11	Sand, loamy fine sand, coarse sand, very gravelly loamy coarse sand	SM, SP, SP-SM		A-1-b, A-1-a		0	0-7	53-85	18-78	9-54
	11-19	Sand, loamy fine sand, coarse sand, very gravelly loamy coarse sand, loamy sand	SM, SP, SW-SM		A-2-4, A-1-a		0	0-14	51-93	7-78	3-54
	19-31	Loamy sand, extremely gravelly coarse sand, loamy coarse sand, loamy sand	SM, SP		A-1-b, A-1-a		0	0-22	51-93	7-78	3-48
	31-43	Sand, loamy sand, extremely gravelly coarse sand, loamy coarse sand, loamy sand	SM, SP, SW		A-1-b, A-1-a		0	0-22	51-93	7-78	3-48
	43-60	Sand, loamy sand, loamy coarse sand, coarse sand, stratified sand to loamy sand, coarse sand	SP, SM		A-3, A-2-4, A-1-b		0	0	100	92-100	48-74
1147492	0-2	Slightly decomposed plant material	PT		A-8		0	0	100	100	100
Lackawanna, extremely stony	2-3	Cobbly fine sandy loam	GM, ML		A-2-4, A-4		5-23	13-23	59-100	59-100	48-100
	3-7	Cobbly fine sandy loam	CL, SM		CL-ML A-6, A-2-4, A-4		3-23	3-23	77-96	77-96	63-96
	7-8	Cobbly fine sandy loam	GM, ML		A-1-b, A-4		3-23	3-30	56-96	56-96	46-96
	8-16	Fine sandy loam, silt loam, stony loam	CL, GM		CL-ML A-6, A-2-4, A-4		3-23	3-30	56-96	56-96	43-96
	16-24	Stony loam, fine sandy loam, silt loam	CL, GM		CL-ML A-6, A-2-4, A-4		3-23	3-30	56-96	56-96	43-96
	24-29	Loam, sandy loam, stony fine sandy loam, silt loam	CL, SM		SC-SM A-6, A-2-4, A-4		2-17	2-22	66-98	66-98	51-98
	29-60	Silt loam, loam, sandy loam, very cobbly fine sandy loam	CL, SM		GC-GM A-6, A-2-4, A-4		2-17	2-22	66-98	66-98	51-98

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas- sieve number		
			Unified	AASHTO	>10 in	3-10 in	Pct	4	10	40
1147500 Wurtsboro, extremely stony	In				Pct	Pct				
	0-2	Slightly decomposed plant material	PT	A-8	0	0	0	100	100	100
	2-3	Loam	SC-SM, ML, CL	A-6, A-4	0	0	0	87-100	74-100	61-90
	3-5	Fine sandy loam, loam	CL, SM, SC-SM	A-6, A-2-4, A-4	0	0	0	87-100	73-100	57-95
	5-6	Loam, fine sandy loam	CL, SM, SC-SM	A-6, A-2-4, A-4	0	0	0	73-100	73-100	57-95
	6-18	Sandy loam, loam, fine sandy loam	CL, GM, SC-SM	A-6, A-1-b, A-2-4	0	0	0	50-100	50-100	33-87
	18-24	Gravelly sandy loam, loam, fine sandy loam	CL, GP-GM, SC-SM	A-6, A-1-a, A-1-b	0	0	0	19-100	19-100	12-87
	24-30	Gravelly sandy loam, loam, fine sandy loam	GC, GP-GM, SC-SM	A-6, A-1-a, A-2-4	0	0	0	24-75	24-75	16-65
	30-60	Gravelly sandy loam, loam, fine sandy loam	SC-SM, GP-GM, SC	A-6, A-2-4, A-1-a	0	0	0	33-87	33-87	22-75
1147501 Wurtsboro, extremely stony	0-2	Slightly decomposed plant material	PT	A-8	0	0	0	100	100	100
	2-3	Fine sandy loam	ML, SM, SC-SM	A-2-4, A-4	0	0	0	87-100	74-100	59-93
	3-4	Fine sandy loam, loam	CL, SM, SC-SM	A-6, A-2-4, A-4	0	0	0	87-100	73-100	57-95
	4-6	Loam, fine sandy loam	CL, SM, SC-SM	A-6, A-2-4, A-4	0	0	0	73-100	73-100	57-95
	6-18	Sandy loam, loam, fine sandy loam	SC-SM, GM, CL	A-6, A-1-b, A-2-4	0	0	0	50-100	50-100	33-87
	18-24	Gravelly sandy loam, loam, fine sandy loam	CL, GP-GM, SC-SM	A-6, A-1-a, A-1-b	0	0	0	19-100	19-100	12-87
	24-33	Gravelly sandy loam, loam, fine sandy loam	GC, GP-GM, SC-SM	A-6, A-1-a, A-2-4	0	0	0	24-75	24-75	16-65
	33-60	Gravelly sandy loam, loam, fine sandy loam	SC, GP-GM, SC-SM	A-6, A-1-a, A-2-4	0	0	0	33-87	33-87	22-75

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pas- sieve number			
			Unified	AASHTO	>10 in	3-10 in	4	10	40	
1147501 Swartswood, extremely stony	In				Pct	Pct				
	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100	100
	1-2	Loam	ML, GC-GM, CL	A-6, A-2-4, A-4	0	0	57-97	57-97	47-87	47-87
	2-3	Sandy loam, fine sandy loam	CL, SC-SM, GM	A-6, A-1-b, A-4	0	0	59-97	59-97	46-92	46-92
	3-4	Sandy loam, gravelly fine sandy loam	CL, GM, SC-SM	A-6, A-1-b, A-4	0	0	59-97	59-97	46-92	46-92
	4-21	Loam, sandy loam, gravelly fine sandy loam	CL, GM, GC-GM	A-6, A-1-b, A-2-4	0	0	54-92	54-92	41-89	41-89
	21-32	Loam, fine sandy loam, gravelly sandy loam	SC-SM, SC	A-6, A-1-b	0	0	61-88	61-88	42-77	42-77
	32-60	Loam, fine sandy loam, gravelly sandy loam	SC-SM, SC	A-6, A-1-b	0	0	61-88	61-88	42-77	42-77
1147502 Wurtsboro, extremely stony	0-2	Slightly decomposed plant material	PT	A-8	0	0	100	100	100	100
	2-3	Fine sandy loam	ML, SM, SC-SM	A-2-4, A-4	0	0	87-100	74-100	59-93	59-93
	3-4	Fine sandy loam, loam	CL, SM, SC-SM	A-6, A-2-4, A-4	0	0	87-100	73-100	57-95	57-95
	4-6	Loam, fine sandy loam	CL, SM, SC-SM	A-6, A-2-4, A-4	0	0	73-100	73-100	57-95	57-95
	6-18	Sandy loam, loam, fine sandy loam	SC-SM, GM, CL	A-6, A-1-b, A-2-4	0	0	50-100	50-100	33-87	33-87
	18-24	Gravelly sandy loam, loam, fine sandy loam	CL, GP-GM, SC-SM	A-6, A-1-a, A-1-b	0	0	19-100	19-100	12-87	12-87
	24-33	Gravelly sandy loam, loam, fine sandy loam	GC, GP-GM, SC-SM	A-6, A-1-a, A-2-4	0	0	24-75	24-75	16-65	16-65
	33-60	Gravelly sandy loam, loam, fine sandy loam	SC-SM, SC, GP-GM	A-6, A-1-a, A-2-4	0	0	33-87	33-87	22-75	22-75

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pas sieve number		
					in		4		
			Unified	AASHTO	>10	3-10	4	10	40
1147502 Swartswood, extremely stony	In				Pct	Pct			
	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100
	1-2	Loam	ML, GC-GM, CL	A-6, A-2-4, A-4	0	0	57-97	57-97	47-87
	2-3	Sandy loam, fine sandy loam	CL, SC-SM, GM	A-6, A-1-b, A-4	0	0	59-97	59-97	46-92
	3-4	Sandy loam, gravelly fine sandy loam	CL, GM, SC-SM	A-6, A-1-b, A-4	0	0	59-97	59-97	46-92
	4-21	Loam, sandy loam, gravelly fine sandy loam	GM, GC-GM, CL	A-6, A-1-b, A-2-4	0	0	54-92	54-92	41-89
	21-32	Loam, fine sandy loam, gravelly sandy loam	SC-SM, SC	A-6, A-1-b	0	0	61-88	61-88	42-77
1147527 Udorthents-----	32-60	Loam, fine sandy loam, gravelly sandy loam	SC-SM, SC	A-6, A-1-b	0	0	61-88	61-88	42-77
	0-12	Loam	ML, GW, CL	A-6, A-4, A-1-a	0-63	0	11-100	8-100	6-90
	12-72	Loam, sand, loamy sand, sandy loam, fine sandy loam	SM, SC, GW	A-6, A-2-4, A-1-a	0-62	0	12-100	8-100	5-91
1147532 Udorthents-----	0-12	Loam	ML, GW, CL	A-6, A-1-a, A-4	0-52	0	11-100	8-100	6-90
	12-72	Loam, sand, loamy sand, sandy loam, fine sandy loam	SC, GW, SM	A-6, A-1-a, A-2-4	0-52	0	12-100	8-100	5-91

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pas- sieve number			
			Unified	AASHTO	>10 in	3-10 in	4	10	40	
1147533 Wurtsboro, extremely stony	In				Pct	Pct				
	0-2	Slightly decomposed plant material	PT	A-8	0	0	100	100	100	
	2-3	Fine sandy loam	ML, SM, SC-SM	A-2-4, A-4	0	0	87-100	74-100	59-93	
	3-4	Fine sandy loam, loam	CL, SM, SC-SM	A-6, A-2-4, A-4	0	0	87-100	73-100	57-95	
	4-6	Loam, fine sandy loam	CL, SM, SC-SM	A-6, A-2-4, A-4	0	0	73-100	73-100	57-95	
	6-18	Sandy loam, loam, fine sandy loam	SC-SM, GM, CL	A-6, A-1-b, A-2-4	0	0	50-100	50-100	33-87	
	18-24	Gravelly sandy loam, loam, fine sandy loam	CL, GP-GM, SC-SM	A-6, A-1-a, A-1-b	0	0	19-100	19-100	12-87	
	24-33	Gravelly sandy loam, loam, fine sandy loam	GC, GP-GM, SC-SM	A-6, A-1-a, A-2-4	0	0	24-75	24-75	16-65	
	33-60	Gravelly sandy loam, loam, fine sandy loam	SC-SM, SC, GP-GM	A-6, A-1-a, A-2-4	0	0	33-87	33-87	22-75	
Swartswood, extremely stony	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	100	
	1-2	Loam	ML, GC-GM, CL	A-6, A-2-4, A-4	0	0	57-97	57-97	47-87	
	2-3	Sandy loam, fine sandy loam	CL, SC-SM, GM	A-6, A-1-b, A-4	0	0	59-97	59-97	46-92	
	3-4	Sandy loam, gravelly fine sandy loam	CL, GM, SC-SM	A-6, A-1-b, A-4	0	0	59-97	59-97	46-92	
	4-21	Loam, sandy loam, gravelly fine sandy loam	GM, GC-GM, CL	A-6, A-1-b, A-2-4	0	0	54-92	54-92	41-89	
	21-32	Loam, fine sandy loam, gravelly sandy loam	SC-SM, SC	A-6, A-1-b	0	0	61-88	61-88	42-77	
	32-60	Loam, fine sandy loam, gravelly sandy loam	SC-SM, SC	A-6, A-1-b	0	0	61-88	61-88	42-77	
1948749 Arnot-----	0-8	Channery silt loam	SM, ML, GM	A-5, A-4, A-2	0	5-10	60-85	55-80	45-80	
	8-16	Very channery silt loam, very channery loam	GM	A-4, A-2, A-1	0	10-25	30-60	25-55	20-55	
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	16-26	Bedrock								

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage passing sieve number		
			Unified	AASHTO	>10 in	3-10 in	4	10	40	
1948750	In				Pct	Pct				
Arnot-----	0-8	Channery silt loam	SM, ML, GM	A-5, A-4, A-2	0	5-10	60-85	55-80	45-80	
	8-16	Very channery silt loam, very channery loam	GM	A-4, A-2, A-1	0	10-25	30-60	25-55	20-55	
	16-26	Bedrock	---	---	---	---	---	---	---	
1948751										
Arnot-----	0-8	Channery silt loam	SM, ML, GM	A-5, A-4, A-2	0	5-10	60-85	55-80	45-80	
	8-16	Very channery silt loam, very channery loam	GM	A-4, A-2, A-1	0	10-25	30-60	25-55	20-55	
	16-26	Bedrock	---	---	---	---	---	---	---	
1948774										
Conotton-----	0-9	Gravelly loam, gravelly sandy loam	SM, ML, GM	A-4, A-2	0	0-5	65-90	45-80	40-70	
	9-45	Very gravelly sandy loam, very gravelly loam, gravelly coarse sandy loam	SC-SM, SM, GC-GM, GM	A-2	0	0-10	35-70	25-50	25-40	
	45-80	Stratified very gravelly sand to very gravelly loamy coarse sand	SM, SW-SM, GM, GW-GM	A-1	0	0-10	25-65	15-60	15-40	
1948775										
Conotton-----	0-9	Gravelly loam, gravelly sandy loam	SM, ML, GM	A-4, A-2	0	0-5	65-90	45-80	40-70	
	9-45	Very gravelly sandy loam, very gravelly loam, gravelly coarse sandy loam	SC-SM, SM, GC-GM, GM	A-2	0	0-10	35-70	25-50	25-40	
	45-80	Stratified very gravelly sand to very gravelly loamy coarse sand	SM, SW-SM, GM, GW-GM	A-1	0	0-10	25-65	15-60	15-40	

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pas- sieve number				
			Unified	AASHTO	>10 in	3-10 in	4	10	40		
1948776 Conotton-----	In				Pct	Pct					
	0-9	Gravelly loam, gravelly sandy loam	SM, ML, GM	A-4, A-2		0	0-5	65-90	45-80	40-70	
	9-45	Very gravelly sandy loam, very gravelly loam, gravelly coarse sandy loam	SC-SM, SM, GC-GM, GM	A-2		0	0-10	35-70	25-50	25-40	
	45-80	Stratified very gravelly sand to very gravelly loamy coarse sand	SM, SW-SM, GM, GW-GM	A-1		0	0-10	25-65	15-60	15-40	
1948777 Conotton-----	0-9	Gravelly loam, gravelly sandy loam	SM, ML, GM	A-4, A-2		0	0-5	65-90	45-80	40-70	
	9-45	Very gravelly sandy loam, very gravelly loam, gravelly coarse sandy loam	SC-SM, SM, GC-GM, GM	A-2		0	0-10	35-70	25-50	25-40	
	45-80	Stratified very gravelly sand to very gravelly loamy coarse sand	SM, SW-SM, GM, GW-GM	A-1		0	0-10	25-65	15-60	15-40	
1948797 Manlius-----	0-8	Channery silt loam	ML, SM, CL-ML, GM	A-4, A-2		0	5-25	55-80	50-75	35-75	75-55
	8-24	Very channery silt loam, very channery loam	GW-GM, GM, GC-GM	A-4, A-2, A-1		0	10-25	25-60	20-55	15-55	
	24-32	Very channery silt loam, channery loam	GW-GM, GM, GC-GM	A-4, A-2, A-1		0-1	10-25	15-60	10-55	5-55	55-55
	32-40	Bedrock	---	---		---	---	---	---	---	---
1948802 Manlius-----	0-8	Channery silt loam	ML, SM, CL-ML, GM	A-4, A-2		0	5-25	55-80	50-75	35-75	75-55
	8-24	Very channery silt loam, very channery loam	GW-GM, GM, GC-GM	A-4, A-2, A-1		0	10-25	25-60	20-55	15-55	
	24-32	Very channery silt loam, channery loam	GW-GM, GM, GC-GM	A-4, A-2, A-1		0-1	10-25	15-60	10-55	5-55	55-55
	32-40	Bedrock	---	---		---	---	---	---	---	---



Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage pas- sieve number		
			Unified	AASHTO	>10 in	3-10 in	4	10	40
1948818 Manlius-----	In				Pct	Pct			
	0-8	Channery silt loam	ML, SM, CL-ML, GM	A-4, A-2	0	5-25	55-80	50-75	35-75
	8-24	Very channery silt loam, very channery loam	GW-GM, GM, GC-GM	A-4, A-2, A-1	0	10-25	25-60	20-55	15-55
	24-32	Very channery silt loam, channery loam	GW-GM, GM, GC-GM	A-4, A-2, A-1	0-1	10-25	15-60	10-55	5-55
	32-40	Bedrock	---	---	---	---	---	---	---
1948832 Penargyl-----	0-12	Channery silt loam	SM, SC-SM, ML, CL, GM	A-4, A-2	0-1	0-3	65-85	65-80	40-75
	12-74	Cobbly silty clay loam, cobbly clay loam, cobbly loam	SC, CL-ML, CL A-2-4	A-6, A-4, A-2-4	0-1	0-1	65-90	65-90	25-75
	74-80	Very channery loam, channery silt loam, channery silty clay loam	GM, GC-GM	A-4, A-7, A-1, A-2	0-1	0-25	20-50	20-45	15-45
	80-90	Bedrock	---	---	---	---	---	---	---
	0-10	Gravelly silt loam	SM, GC-GM, SC-SM, CL-ML, ML	A-4, A-2, A-1	0	0-25	50-95	45-80	25-75
1948846 PHELPS-----	10-22	Gravelly loam, gravelly clay loam, silt loam	SM, GC-GM, SC-SM, CL-ML, GM, ML	A-4, A-2	0	0-25	50-95	45-95	35-90
	22-30	Gravelly loam, gravelly clay loam, gravelly silt loam	SM, GC-GM, SC-SM, CL-ML, GM, ML	A-4, A-2	0	0-25	50-95	45-95	35-90
	30-79	Stratified very gravelly sand to loamy sand	GW, GW-GM, GM, GP	A-1	0	5-30	15-55	10-50	5-40
	0-5	Loam	SC, SM, CL, ML	A-6, A-4, A-2	0	0-5	80-100	75-100	55-10
	5-40	Gravelly loam, loam, very gravelly loam	SC, SM, CL, ML	A-6, A-4, A-2	0	0-5	80-100	75-100	55-10
1948855 Udorthents, loamy-----	40-70	Very gravelly sandy loam, loam, silty clay loam	ML, SC, CL, GM	A-4, A-6, A-1, A-2	0-2	0-10	35-100	30-100	20-10

Table 14.--Engineering Properties--Continued

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments			Percentage pas sieve number			
			Unified	AASHTO	>10 in	3-10 in	Pct	4	10	40	
1948989	<i>In</i>				<i>Pct</i>	<i>Pct</i>					
Delaware-----	0-10	Fine sandy loam, loam	SM, ML	A-4		0	0	100	95-100	75-95	
	10-40	Fine sandy loam, very fine sandy loam	SM, ML	A-4		0	0-1	99-100	95-100	70-90	
	40-87	Loamy fine sand, fine sandy loam, loamy sand	SM, ML	A-4, A-2		0	0-5	95-100	95-100	80-95	

# Soil Survey of Delaware Water Gap National Recreation Area

Table 15.--Physical Soil Properties

[Sand, silt, and clay values are shown either as a range or as a representative value. Absence of an entry indicates that data were not estimated. Soil properties are measured or inferred from direct observations in the field or laboratory]

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
290836									
Hoosic, very stony-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-9	35-47	35-50	10-18	1.30-1.52	2.0-20.0	0.11-0.16	0.0-0.2	1.8-5.2
	9-21	35-76	15-50	5-18	1.45-1.57	2.0-20.0	0.05-0.14	0.0-0.1	0.2-1.0
	21-27	82-98	2-13	0-7	0.67-1.58	20.0-99.9	0.01-0.05	0.0-0.1	0.0-0.5
	27-37	82-98	2-13	0-7	0.67-1.58	20.0-99.9	0.01-0.05	0.0-0.1	0.0-0.5
	37-49	82-98	2-13	0-7	0.67-1.58	20.0-99.9	0.01-0.05	0.0-0.1	0.0-0.5
	49-60	82-98	2-13	0-7	0.67-1.58	20.0-99.9	0.01-0.05	0.0-0.1	0.0-0.5
Otisville, very stony-----	0-1	0-76	0-26	0-14	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	61-76	15-26	9-14	1.24-1.68	5.9-20.0	0.09-0.12	0.0-0.5	1.8-5.2
	2-7	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.09-0.12	0.0-0.3	0.0-0.5
	7-11	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.09-0.12	0.0-0.1	0.0-0.5
	11-19	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.05	0.0-0.1	0.0-0.5
	19-31	82-98	2-13	0-7	0.67-1.58	5.9-99.9	0.01-0.02	0.0-0.1	0.0-0.5
	31-43	82-98	2-13	0-7	0.67-1.58	5.9-99.9	0.01-0.02	0.0-0.1	0.0-0.5
	43-60	82-98	2-13	0-7	0.67-1.58	5.9-99.9	0.01-0.02	0.0-0.1	0.0-0.5
296265									
Alden-----	0-9	26	53	15-27	1.10-1.40	0.6-2.0	0.16-0.22	0.0-2.9	10-25
	9-35	18	54	18-35	1.20-1.50	0.2-0.6	0.14-0.20	0.0-2.9	0.0-1.9
	35-60	38	36	18-35	1.50-1.80	0.0-0.6	0.08-0.15	0.0-2.9	0.0-0.5
296269									
Fluvents, (alluvial land)	0-6	67	23	5-15	1.00-1.40	0.6-2.0	0.10-0.15	0.0-2.9	0.5-2.0
	6-42	68	20	5-20	1.00-1.45	0.6-6.0	0.06-0.12	0.0-2.9	0.0-0.3
	42-60	19	54	18-35	1.20-1.40	0.6-2.0	0.08-0.14	0.0-2.9	0.0-0.3
296271									
Alvira-----	0-10	44	41	10-20	1.40-1.60	0.6-2.0	0.14-0.20	0.0-2.9	1.0-2.0
	10-21	19	54	18-35	1.40-1.60	0.6-2.0	0.14-0.18	0.0-2.9	0.0-0.5
	21-60	19	54	18-35	1.55-1.80	0.1-0.2	0.08-0.12	0.0-2.9	0.0-0.5
Watson-----	0-10	42	38	12-27	1.20-1.40	0.6-2.0	0.12-0.18	0.0-2.9	0.0-4.0
	10-27	18	54	17-35	1.40-1.60	0.6-2.0	0.12-0.16	3.0-5.9	0.0-0.3
	27-60	34	36	15-35	1.60-1.80	0.1-0.2	0.08-0.12	3.0-5.9	0.0-0.3
296272									
Bath-----	0-8	32	56	5-18	1.10-1.40	0.6-2.0	0.10-0.20	0.0-2.9	3.0-6.0
	8-27	32	56	5-18	1.20-1.50	0.6-2.0	0.08-0.18	0.0-2.9	0.0-0.4
	27-60	32	56	5-18	1.50-1.90	0.0-0.2	0.01-0.06	0.0-2.9	0.0-0.4
	60-64	46	44	3-18	1.50-1.80	0.0-0.2	0.01-0.06	0.0-2.9	0.0-0.4
296273									
Bath-----	0-8	32	56	5-18	1.10-1.40	0.6-2.0	0.10-0.20	0.0-2.9	3.0-6.0
	8-27	32	56	5-18	1.20-1.50	0.6-2.0	0.08-0.18	0.0-2.9	0.0-0.4
	27-60	32	56	5-18	1.50-1.90	0.0-0.2	0.01-0.06	0.0-2.9	0.0-0.4
	60-64	46	44	3-18	1.50-1.80	0.0-0.2	0.01-0.06	0.0-2.9	0.0-0.4
296274									
Bath-----	0-8	32	56	5-18	1.10-1.40	0.6-2.0	0.10-0.20	0.0-2.9	3.0-6.0
	8-27	32	56	5-18	1.20-1.50	0.6-2.0	0.08-0.18	0.0-2.9	0.0-0.4
	27-60	32	56	5-18	1.50-1.90	0.0-0.2	0.01-0.06	0.0-2.9	0.0-0.4
	60-64	46	44	3-18	1.50-1.80	0.0-0.2	0.01-0.06	0.0-2.9	0.0-0.4

# Soil Survey of Delaware Water Gap National Recreation Area

Table 15.--Physical Soil Properties--Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
296275									
Bath-----	0-8	32	56	5-18	1.10-1.40	0.6-2.0	0.10-0.20	0.0-2.9	1.0-6.0
	8-27	45	43	5-18	1.20-1.50	0.6-2.0	0.08-0.18	0.0-2.9	0.1-2.0
	27-60	45	43	5-18	1.50-1.90	0.0-0.2	0.01-0.09	0.0-2.9	0.1-0.5
	60-64	46	44	3-18	1.50-1.80	0.0-0.2	0.01-0.06	0.0-2.9	0.1-0.5
296276									
Bath-----	0-8	32	56	5-18	1.10-1.40	0.6-2.0	0.10-0.20	0.0-2.9	1.0-6.0
	8-27	45	43	5-18	1.20-1.50	0.6-2.0	0.08-0.18	0.0-2.9	0.1-2.0
	27-60	45	43	5-18	1.50-1.90	0.0-0.2	0.01-0.09	0.0-2.9	0.1-0.5
	60-64	46	44	3-18	1.50-1.80	0.0-0.2	0.01-0.06	0.0-2.9	0.1-0.5
296277									
Benson-----	0-8	26	54	10-30	1.40-1.60	0.6-2.0	0.14-0.20	0.0-2.9	2.0-6.0
	8-18	26	54	10-30	1.40-1.70	0.6-2.0	0.06-0.16	0.0-2.9	0.0-0.3
	18-22	---	---	---	---	---	---	---	---
296278									
Benson-----	0-8	26	54	10-30	1.40-1.60	0.6-2.0	0.14-0.20	0.0-2.9	2.0-6.0
	8-18	26	54	10-30	1.40-1.70	0.6-2.0	0.06-0.16	0.0-2.9	0.0-0.3
	18-22	---	---	---	---	---	---	---	---
296279									
Benson-----	0-8	26	54	10-30	1.40-1.60	0.6-2.0	0.14-0.20	0.0-2.9	2.0-6.0
	8-18	26	54	10-30	1.40-1.70	0.6-2.0	0.06-0.16	0.0-2.9	0.0-0.3
	18-22	---	---	---	---	---	---	---	---
296280									
Braceville-----	0-3	43	40	10-25	1.20-1.40	0.2-2.0	0.08-0.12	0.0-2.9	1.0-3.0
	3-30	29	53	10-25	1.20-1.50	0.2-2.0	0.08-0.12	0.0-2.9	0.0-0.5
	30-55	43	40	10-25	1.30-1.60	0.1-0.6	0.06-0.10	0.0-2.9	0.0-0.5
	55-60	91	5	1-10	1.20-1.40	2.0-20.0	0.03-0.06	0.0-2.9	0.0-0.5
296281									
Braceville-----	0-3	43	40	10-25	1.20-1.40	0.2-2.0	0.08-0.12	0.0-2.9	1.0-3.0
	3-30	29	53	10-25	1.20-1.50	0.2-2.0	0.08-0.12	0.0-2.9	0.0-0.5
	30-55	43	40	10-25	1.30-1.60	0.1-0.6	0.06-0.10	0.0-2.9	0.0-0.5
	55-60	91	5	1-10	1.20-1.40	2.0-20.0	0.03-0.06	0.0-2.9	0.0-0.5
296283									
Buchanan-----	0-4	43	38	10-27	1.20-1.40	0.6-2.0	0.11-0.16	0.0-2.9	1.5-7.0
	4-25	39	37	18-30	1.30-1.60	0.6-2.0	0.10-0.16	0.0-2.9	0.1-3.0
	25-60	38	36	18-35	1.50-1.80	0.1-0.2	0.06-0.10	0.0-2.9	0.1-0.5
296288									
Chippewa-----	0-8	27	54	10-27	1.10-1.40	0.6-2.0	0.14-0.21	0.0-2.9	3.0-10
	8-16	19	54	18-35	1.20-1.50	0.6-2.0	0.10-0.17	0.0-2.9	0.5-5.0
	16-48	22	55	10-35	1.55-2.05	0.1-0.2	0.01-0.02	0.0-2.9	0.2-1.0
	48-80	40	38	10-35	1.50-1.80	0.1-0.2	0.01-0.02	0.0-2.9	0.2-1.0
Norwich-----	0-8	27	54	10-27	1.10-1.40	0.6-2.0	0.14-0.20	0.0-2.9	3.0-10
	8-16	22	55	18-27	1.20-1.50	0.6-2.0	0.11-0.18	0.0-2.9	0.5-5.0
	16-48	27	54	10-27	1.55-2.05	0.0-0.1	0.02-0.04	0.0-2.9	0.2-1.0
	48-80	25	53	10-35	1.50-1.80	0.0-0.2	0.01-0.02	0.0-2.9	0.2-1.0
296289									
Chippewa-----	0-8	27	54	10-27	1.10-1.40	0.6-2.0	0.11-0.18	0.0-2.9	3.0-10
	8-16	19	54	18-35	1.20-1.50	0.6-2.0	0.10-0.17	0.0-2.9	0.5-5.0
	16-48	22	55	10-35	1.55-2.05	0.1-0.2	0.01-0.02	0.0-2.9	0.2-1.0
	48-80	40	38	10-35	1.50-1.80	0.1-0.2	0.01-0.02	0.0-2.9	0.2-1.0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 15.--Physical Soil Properties--Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
296289									
Norwich-----	0-8	27	54	10-27	1.10-1.40	0.6-2.0	0.12-0.18	0.0-2.9	3.0-10
	8-16	22	55	18-27	1.20-1.50	0.6-2.0	0.11-0.18	0.0-2.9	0.5-5.0
	16-48	27	54	10-27	1.55-2.05	0.0-0.1	0.02-0.04	0.0-2.9	0.2-1.0
	48-80	25	53	10-35	1.50-1.80	0.0-0.2	0.01-0.02	0.0-2.9	0.2-1.0
296295									
Udorthents, cut and fill.									
296297									
Dekalb-----	0-7	44	41	10-20	1.20-1.50	6.0-20.0	0.08-0.12	0.0-2.9	2.0-4.0
	7-24	68	20	7-18	1.20-1.50	6.0-20.0	0.06-0.12	0.0-2.9	0.0-1.0
	24-32	67	23	5-15	1.20-1.50	6.0-20.0	0.05-0.10	0.0-2.9	0.0-1.0
	32-36	---	---	---	---	---	---	---	---
296298									
Dekalb-----	0-7	44	41	10-20	1.20-1.50	6.0-20.0	0.08-0.12	0.0-2.9	2.0-4.0
	7-24	68	20	7-18	1.20-1.50	6.0-20.0	0.06-0.12	0.0-2.9	0.0-1.0
	24-32	67	23	5-15	1.20-1.50	6.0-20.0	0.05-0.10	0.0-2.9	0.0-1.0
	32-36	---	---	---	---	---	---	---	---
296303									
Hazleton-----	0-5	68	20	7-18	1.20-1.40	2.0-6.0	0.10-0.16	0.0-2.9	2.0-4.0
	5-31	68	20	7-18	1.20-1.40	2.0-20.0	0.08-0.12	0.0-2.9	0.0-0.4
	31-58	68	22	5-15	1.20-1.40	2.0-20.0	0.06-0.12	0.0-2.9	0.0-0.4
	58-69	---	---	---	---	---	---	---	---
296304									
Holly-----	0-8	20-45	40-60	15-27	1.20-1.40	0.6-2.0	0.20-0.24	0.0-2.9	2.0-5.0
	8-28	15-80	10-60	18-30	1.20-1.50	0.6-2.0	0.17-0.21	0.0-2.9	0.0-1.0
	28-41	15-80	10-60	10-27	1.20-1.45	0.6-6.0	0.10-0.20	0.0-2.9	0.0-1.0
	41-60	35-95	1-50	0-27	1.20-1.40	0.6-6.0	0.07-0.18	0.0-2.9	0.0-2.0
296311									
Lackawanna-----	0-8	43	38	10-27	1.20-1.40	0.6-2.0	0.10-0.16	0.0-2.9	1.0-3.0
	8-25	45	43	5-18	1.40-1.60	0.6-2.0	0.10-0.16	0.0-2.9	0.0-0.5
	25-60	32	56	5-18	1.50-1.90	0.1-0.2	0.06-0.12	0.0-2.9	0.0-0.5
Bath-----	0-8	32	56	5-18	1.10-1.40	0.6-2.0	0.10-0.20	0.0-2.9	3.0-6.0
	8-27	30	55	5-18	1.20-1.50	0.6-2.0	0.08-0.18	0.0-2.9	0.1-0.3
	27-60	30	55	5-18	1.50-1.90	0.0-0.2	0.01-0.09	0.0-2.9	0.1-0.3
	60-64	44	41	3-18	1.50-1.80	0.0-0.2	0.01-0.06	0.0-2.9	0.1-0.3
296312									
Lackawanna-----	0-8	20-50	20-60	10-27	1.20-1.40	0.6-2.0	0.10-0.16	0.0-2.9	1.0-3.0
	8-25	20-75	20-60	5-18	1.40-1.60	0.6-2.0	0.10-0.16	0.0-2.9	0.0-0.5
	25-60	20-75	20-60	5-18	1.50-1.90	0.1-0.2	0.06-0.12	0.0-2.9	0.0-0.5
296313									
Lackawanna-----	0-8	20-50	20-60	10-27	1.20-1.40	0.6-2.0	0.10-0.16	0.0-2.9	1.0-3.0
	8-25	20-75	20-60	5-18	1.40-1.60	0.6-2.0	0.10-0.16	0.0-2.9	0.0-0.5
	25-60	20-75	20-60	5-18	1.50-1.90	0.1-0.2	0.06-0.12	0.0-2.9	0.0-0.5
296315									
Lackawanna-----	0-8	43	38	10-27	1.20-1.40	0.6-2.0	0.10-0.16	0.0-2.9	1.0-3.0
	8-25	45	43	5-18	1.40-1.60	0.6-2.0	0.10-0.16	0.0-2.9	0.0-0.5
	25-60	32	56	5-18	1.50-1.90	0.1-0.2	0.06-0.12	0.0-2.9	0.0-0.5
296316									
Lackawanna-----	0-8	43	38	10-27	1.20-1.40	0.6-2.0	0.10-0.16	0.0-2.9	1.0-3.0
	8-25	45	43	5-18	1.40-1.60	0.6-2.0	0.10-0.16	0.0-2.9	0.0-0.5
	25-60	32	56	5-18	1.50-1.90	0.1-0.2	0.06-0.12	0.0-2.9	0.0-0.5

# Soil Survey of Delaware Water Gap National Recreation Area

Table 15.--Physical Soil Properties--Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
296317									
Laidig-----	0-6	43	40	7-27	1.20-1.40	0.6-6.0	0.08-0.12	0.0-2.9	1.0-5.0
	6-33	38	36	18-35	1.30-1.50	0.6-6.0	0.08-0.12	0.0-2.9	0.0-0.5
	33-65	38	36	18-35	1.45-1.80	0.0-0.6	0.06-0.10	0.0-2.9	0.0-0.3
296326									
Lordstown-----	0-7	31	56	8-18	1.10-1.40	0.6-2.0	0.11-0.17	0.0-2.9	1.0-6.0
	7-26	31	56	8-18	1.10-1.40	0.6-2.0	0.11-0.17	0.0-2.9	0.1-2.0
	26-30	32	56	5-18	1.20-1.50	0.6-2.0	0.05-0.14	0.0-2.9	0.0-1.0
	30-42	---	---	---	---	---	---	---	---
296327									
Lordstown-----	0-7	31	56	8-18	1.10-1.40	0.6-2.0	0.11-0.17	0.0-2.9	1.0-6.0
	7-26	31	56	8-18	1.10-1.40	0.6-2.0	0.11-0.17	0.0-2.9	0.1-2.0
	26-30	32	56	5-18	1.20-1.50	0.6-2.0	0.05-0.14	0.0-2.9	0.0-1.0
	30-42	---	---	---	---	---	---	---	---
296328									
Lordstown-----	0-7	31	56	8-18	1.10-1.40	0.6-2.0	0.11-0.17	0.0-2.9	1.0-6.0
	7-26	44	40	5-26	1.20-1.50	0.6-2.0	0.10-0.16	0.0-2.9	0.1-2.0
	26-30	32	56	5-18	1.20-1.50	0.6-2.0	0.05-0.14	0.0-2.9	0.0-1.0
	30-42	---	---	---	---	---	---	---	---
Oquaga-----	0-7	43	40	7-27	1.10-1.40	0.6-2.0	0.08-0.17	0.0-2.9	1.0-6.0
	7-30	43	40	7-27	1.20-1.50	0.6-2.0	0.04-0.12	0.0-2.9	0.1-2.0
	30-42	---	---	---	---	---	---	---	---
296329									
Mardin-----	0-8	15-45	35-70	5-18	1.10-1.40	0.6-2.0	0.10-0.20	0.0-2.9	1.5-7.0
	8-17	15-45	35-70	10-18	1.20-1.50	0.6-2.0	0.09-0.16	0.0-2.9	0.0-0.4
	17-21	15-45	35-70	10-18	1.20-1.50	0.6-2.0	0.09-0.16	0.0-2.9	0.0-0.4
	21-60	15-45	35-70	10-18	1.50-1.90	0.0-0.2	0.01-0.03	0.0-2.9	0.0-0.4
	60-80	15-45	35-70	10-18	1.50-1.80	0.0-0.2	0.01-0.03	0.0-2.9	0.0-0.4
296330									
Mardin-----	0-8	15-45	35-70	5-18	1.10-1.40	0.6-2.0	0.10-0.20	0.0-2.9	1.5-7.0
	8-17	15-45	35-70	10-18	1.20-1.50	0.6-2.0	0.09-0.16	0.0-2.9	0.0-0.4
	17-21	15-45	35-70	10-18	1.20-1.50	0.6-2.0	0.09-0.16	0.0-2.9	0.0-0.4
	21-60	15-45	35-70	10-18	1.50-1.90	0.0-0.2	0.01-0.03	0.0-2.9	0.0-0.4
	60-80	15-45	35-70	10-18	1.50-1.80	0.0-0.2	0.01-0.03	0.0-2.9	0.0-0.4
296331									
Mardin-----	0-8	37	51	8-27	1.20-1.40	0.6-2.0	0.10-0.16	0.0-2.9	1.5-7.0
	8-17	30	56	10-18	1.20-1.50	0.6-2.0	0.09-0.16	0.0-2.9	0.0-1.0
	17-21	30	56	10-18	1.20-1.50	0.6-2.0	0.09-0.16	0.0-2.9	0.0-1.0
	21-60	30	56	10-18	1.50-1.90	0.0-0.2	0.01-0.03	0.0-2.9	0.0-1.0
	60-80	30	56	10-18	1.50-1.80	0.0-0.2	0.01-0.03	0.0-2.9	0.0-1.0
296332									
Mardin-----	0-8	37	51	8-27	1.20-1.40	0.6-2.0	0.10-0.16	0.0-2.9	1.5-7.0
	8-17	30	56	10-18	1.20-1.50	0.6-2.0	0.09-0.16	0.0-2.9	0.0-1.0
	17-21	30	56	10-18	1.20-1.50	0.6-2.0	0.09-0.16	0.0-2.9	0.0-1.0
	21-60	30	56	10-18	1.50-1.90	0.0-0.2	0.01-0.03	0.0-2.9	0.0-1.0
	60-80	30	56	10-18	1.50-1.80	0.0-0.2	0.01-0.03	0.0-2.9	0.0-1.0
296335									
Meckesville-----	0-9	43	38	10-27	1.10-1.30	0.6-2.0	0.12-0.16	0.0-2.9	1.0-4.0
	9-36	38	36	18-35	1.20-1.40	0.6-2.0	0.12-0.16	0.0-2.9	0.0-0.5
	36-60	38	36	18-35	1.45-1.85	0.2-0.6	0.08-0.12	0.0-2.9	0.0-0.3
	60-64	40	38	10-35	1.20-1.40	0.2-0.6	0.08-0.12	0.0-2.9	0.0-0.3

# Soil Survey of Delaware Water Gap National Recreation Area

Table 15.--Physical Soil Properties--Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
296337									
Meckesville-----	0-9	43	38	10-27	1.10-1.30	0.6-2.0	0.12-0.16	0.0-2.9	1.0-4.0
	9-36	38	36	18-35	1.20-1.40	0.6-2.0	0.10-0.14	0.0-2.9	0.0-0.5
	36-60	38	36	18-35	1.45-1.85	0.2-0.6	0.08-0.12	0.0-2.9	0.0-0.5
	60-64	40	38	10-35	1.20-1.40	0.2-0.6	0.08-0.12	0.0-2.9	0.0-0.5
296338									
Morris-----	0-8	26	54	15-25	1.20-1.40	0.6-2.0	0.10-0.14	0.0-2.9	2.0-8.0
	8-17	29	54	10-30	1.10-1.70	0.0-0.2	0.06-0.08	0.0-2.9	0.2-4.0
	17-70	29	54	10-30	1.60-2.05	0.0-0.2	0.06-0.08	0.0-2.9	0.1-0.6
	70-80	29	54	10-30	1.50-1.80	0.0-0.2	0.06-0.08	0.0-2.9	0.0-0.3
296339									
Morris-----	0-8	26	54	15-25	1.20-1.40	0.6-2.0	0.12-0.16	0.0-2.9	2.0-8.0
	8-17	26	54	15-25	1.10-1.70	0.6-2.0	0.12-0.16	0.0-2.9	0.2-4.0
	17-70	39	37	15-32	1.60-2.05	0.0-0.1	0.06-0.08	0.0-2.9	0.1-0.6
	70-80	39	37	15-32	1.50-1.80	0.0-0.1	0.06-0.08	0.0-2.9	0.1-0.6
296340									
Morris-----	0-8	26	54	15-25	1.20-1.40	0.6-2.0	0.12-0.16	0.0-2.9	2.0-8.0
	8-17	26	54	15-25	1.10-1.70	0.6-2.0	0.12-0.16	0.0-2.9	0.2-4.0
	17-70	39	37	15-32	1.60-2.05	0.0-0.1	0.06-0.08	0.0-2.9	0.1-0.6
	70-80	39	37	15-32	1.50-1.80	0.0-0.1	0.06-0.08	0.0-2.9	0.1-0.6
296341									
Freetown, mucky peat-----	0-6	---	---	0	0.10-0.30	0.6-6.0	0.35-0.45	0.0-2.9	50-99
	6-72	---	---	0	0.15-0.30	0.6-6.0	0.35-0.45	0.0-2.9	50-95
296342									
Paupack, mucky peat (shallow)-	0-3	---	---	0	0.15-0.40	0.2-6.0	0.35-0.45	0.0-2.9	30-50
	3-26	---	---	0	0.80-0.90	0.2-6.0	0.35-0.45	0.0-2.9	30-50
	26-36	---	---	0	1.00-1.20	0.2-2.0	0.20-0.40	0.0-2.9	2.0-10
	36-70	66	23	5-18	1.40-1.60	0.2-2.0	0.11-0.20	0.0-2.9	0.0-2.0
296343									
Oquaga-----	0-7	43	40	7-27	1.10-1.40	0.6-2.0	0.08-0.17	0.0-2.9	1.0-6.0
	7-30	43	40	7-27	1.20-1.50	0.6-2.0	0.04-0.12	0.0-2.9	0.1-2.0
	30-42	---	---	---	---	---	---	---	---
Lackawanna-----	0-8	43	38	10-27	1.20-1.40	0.6-2.0	0.10-0.14	0.0-2.9	1.0-6.0
	8-25	45	43	5-18	1.40-1.60	0.6-2.0	0.10-0.14	0.0-2.9	0.1-2.0
	25-60	45	43	5-18	1.50-1.90	0.1-0.2	0.06-0.12	0.0-2.9	0.1-0.5
296344									
Oquaga-----	0-7	43	40	7-27	1.10-1.40	0.6-2.0	0.08-0.17	0.0-2.9	1.0-6.0
	7-30	43	40	7-27	1.20-1.50	0.6-2.0	0.04-0.12	0.0-2.9	0.1-2.0
	30-42	---	---	---	---	---	---	---	---
Lackawanna-----	0-8	43	38	10-27	1.20-1.40	0.6-2.0	0.10-0.14	0.0-2.9	1.0-6.0
	8-25	45	43	5-18	1.40-1.60	0.6-2.0	0.10-0.14	0.0-2.9	0.1-2.0
	25-60	45	43	5-18	1.50-1.90	0.1-0.2	0.06-0.12	0.0-2.9	0.1-0.5
296346									
Oquaga-----	0-7	43	40	7-27	1.10-1.40	0.6-2.0	0.08-0.17	0.0-2.9	1.0-6.0
	7-30	43	40	7-27	1.20-1.50	0.6-2.0	0.04-0.12	0.0-2.9	0.1-2.0
	30-42	---	---	---	---	---	---	---	---
Lackawanna-----	0-8	43	38	10-27	1.20-1.40	0.6-2.0	0.10-0.16	0.0-2.9	1.0-6.0
	8-25	45	43	5-18	1.40-1.60	0.6-2.0	0.10-0.16	0.0-2.9	0.1-2.0
	25-60	45	43	5-18	1.50-1.90	0.1-0.2	0.06-0.12	0.0-2.9	0.1-0.5

# Soil Survey of Delaware Water Gap National Recreation Area

Table 15.--Physical Soil Properties--Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
296347									
Oquaga-----	0-7	43	40	7-27	1.10-1.40	0.6-2.0	0.08-0.17	0.0-2.9	1.0-6.0
	7-30	43	40	7-27	1.20-1.50	0.6-2.0	0.04-0.12	0.0-2.9	0.1-2.0
	30-42	---	---	---	---	---	---	---	---
Lackawanna-----	0-8	43	38	10-27	1.20-1.40	0.6-2.0	0.10-0.16	0.0-2.9	1.0-6.0
	8-25	45	43	5-18	1.40-1.60	0.6-2.0	0.10-0.16	0.0-2.9	0.1-2.0
	25-60	45	43	5-18	1.50-1.90	0.1-0.2	0.06-0.12	0.0-2.9	0.1-0.5
296348									
Philo-----	0-10	30	56	10-18	1.20-1.40	0.6-2.0	0.14-0.20	0.0-2.9	2.0-4.0
	10-40	70	16	10-18	1.20-1.40	0.6-2.0	0.10-0.20	0.0-2.9	0.0-2.0
	40-60	68	21	5-18	1.20-1.40	2.0-6.0	0.06-0.10	0.0-2.9	0.0-2.0
296349									
Pope-----	0-10	33	57	5-15	1.20-1.40	0.6-2.0	0.14-0.23	0.0-2.9	1.0-4.0
	10-30	32	56	5-18	1.30-1.60	0.6-6.0	0.10-0.18	0.0-2.9	0.0-0.5
	30-60	81	9	5-20	1.30-1.60	0.6-6.0	0.10-0.18	0.0-2.9	0.0-0.3
296350									
Pope-----	0-10	33	57	5-15	1.20-1.40	0.6-2.0	0.14-0.23	0.0-2.9	1.0-4.0
	10-30	32	56	5-18	1.30-1.60	0.6-6.0	0.10-0.18	0.0-2.9	0.0-0.5
	30-60	81	9	5-20	1.30-1.60	0.6-6.0	0.10-0.18	0.0-2.9	0.0-0.3
296351									
Rexford, somewhat poorly drained-	0-8	30	55	10-20	1.20-1.40	0.6-2.0	0.14-0.18	0.0-2.9	2.0-8.0
	8-18	30	56	10-18	1.20-1.50	0.1-0.2	0.04-0.08	0.0-2.9	0.2-4.0
	18-40	45	41	10-18	1.50-1.90	0.1-0.2	0.04-0.08	0.0-2.9	0.1-0.6
	40-63	68	22	5-15	1.20-1.40	2.0-20.0	0.03-0.06	0.0-2.9	0.0-0.6
Rexford, poorly drained-----	0-8	30	55	10-20	1.20-1.40	0.6-2.0	0.14-0.18	0.0-2.9	2.0-8.0
	8-18	30	56	10-18	1.20-1.50	0.1-0.2	0.04-0.08	0.0-2.9	0.2-4.0
	18-40	45	41	10-18	1.50-1.90	0.1-0.2	0.04-0.08	0.0-2.9	0.1-0.6
	40-63	68	22	5-15	1.20-1.40	2.0-20.0	0.03-0.06	0.0-2.9	0.0-0.6
296355									
Sheffield-----	0-7	7	70	18-27	1.30-1.50	0.6-2.0	0.16-0.20	0.0-2.9	3.0-5.0
	7-19	7	63	25-35	1.45-1.70	0.2-0.6	0.13-0.17	0.0-2.9	0.0-1.0
	19-38	7	63	25-35	1.60-1.90	0.0-0.1	0.08-0.12	0.0-2.9	0.0-0.5
	38-66	7	65	15-32	1.55-1.85	0.2-0.6	0.10-0.14	0.0-2.9	0.0-0.3
296363									
Dystrochrepts, very stony-----	0-6	42	45	7-18	1.20-1.40	2.0-6.0	0.10-0.16	0.0-2.9	2.0-4.0
	6-32	42	45	7-18	1.20-1.40	2.0-20.0	0.08-0.12	0.0-2.9	0.0-0.4
	32-56	47	43	5-15	1.20-1.40	2.0-20.0	0.06-0.12	0.0-2.9	0.0-0.4
	56-60	---	---	---	---	---	---	---	---
296369									
Wayland-----	0-9	7	64	15-35	1.05-1.40	0.2-2.0	0.17-0.22	0.0-2.9	4.0-8.0
	9-41	7	64	18-35	1.10-1.60	0.1-0.2	0.16-0.20	0.0-2.9	0.0-1.0
	41-60	37	43	15-25	1.25-1.55	0.1-0.2	0.08-0.19	0.0-2.9	0.0-1.0
296376									
Wellsboro-----	0-8	43	38	10-27	1.20-1.40	0.6-2.0	0.10-0.16	0.0-2.9	1.5-7.0
	8-17	43	40	10-27	1.30-1.50	0.6-2.0	0.10-0.14	0.0-2.9	0.0-0.4
	17-21	43	40	10-27	1.30-1.50	0.6-2.0	0.10-0.14	0.0-2.9	0.0-0.4
	21-60	29	54	10-27	1.50-1.90	0.1-0.2	0.06-0.10	0.0-2.9	0.0-0.4
	60-80	29	54	10-27	1.30-1.60	0.1-0.2	0.06-0.10	0.0-2.9	0.0-0.4



# Soil Survey of Delaware Water Gap National Recreation Area

Table 15.--Physical Soil Properties--Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
296379									
Wellsboro-----	0-8	43	38	10-27	1.20-1.40	0.6-2.0	0.10-0.16	0.0-2.9	1.5-7.0
	8-17	43	40	10-27	1.30-1.50	0.6-2.0	0.10-0.14	0.0-2.9	0.0-0.4
	17-21	43	40	10-27	1.30-1.50	0.6-2.0	0.10-0.14	0.0-2.9	0.0-0.4
	21-60	29	54	10-27	1.50-1.90	0.1-0.2	0.06-0.10	0.0-2.9	0.0-0.4
	60-80	29	54	10-27	1.30-1.60	0.1-0.2	0.06-0.10	0.0-2.9	0.0-0.4
296385									
Wyoming-----	0-7	67	20	8-18	1.10-1.40	6.0-20.0	0.06-0.14	0.0-2.9	2.0-4.0
	7-25	67	23	5-15	1.10-1.50	6.0-20.0	0.06-0.09	0.0-2.9	0.0-0.4
	25-60	85	9	1-11	1.30-1.60	6.0-20.0	0.02-0.04	0.0-2.9	0.0-0.4
296386									
Wyoming-----	0-7	67	20	8-18	1.10-1.40	6.0-20.0	0.06-0.14	0.0-2.9	2.0-4.0
	7-25	67	23	5-15	1.10-1.50	6.0-20.0	0.06-0.09	0.0-2.9	0.0-0.4
	25-60	85	9	1-11	1.30-1.60	6.0-20.0	0.02-0.04	0.0-2.9	0.0-0.4
296387									
Wyoming-----	0-7	67	20	8-18	1.10-1.40	6.0-20.0	0.06-0.14	0.0-2.9	2.0-4.0
	7-25	67	23	5-15	1.10-1.50	6.0-20.0	0.06-0.09	0.0-2.9	0.0-0.4
	25-60	85	9	1-11	1.30-1.60	6.0-20.0	0.02-0.04	0.0-2.9	0.0-0.4
296388									
Wyoming-----	0-7	67	20	8-18	1.10-1.40	6.0-20.0	0.06-0.14	0.0-2.9	2.0-4.0
	7-25	67	23	5-15	1.10-1.50	6.0-20.0	0.06-0.09	0.0-2.9	0.0-0.4
	25-60	85	9	1-11	1.30-1.60	6.0-20.0	0.02-0.04	0.0-2.9	0.0-0.4
296389									
Wyoming-----	0-8	67	20	8-18	1.10-1.40	6.0-20.0	0.06-0.14	0.0-2.9	2.0-4.0
	8-26	67	23	5-15	1.10-1.50	6.0-20.0	0.06-0.09	0.0-2.9	0.0-0.3
	26-60	---	---	1-11	1.30-1.60	6.0-20.0	0.02-0.04	0.0-2.9	0.0-0.3
297185									
Edgemere-----	0-2	---	---	0	0.50-0.90	0.6-2.0	0.23-0.45	0.0-2.9	4.0-20
	2-5	45	43	8-15	1.10-1.40	0.6-2.0	0.12-0.18	0.0-2.9	2.0-8.0
	5-24	45	43	8-15	1.20-1.50	0.6-2.0	0.11-0.18	0.0-2.9	0.0-1.0
	24-66	67	20	8-18	1.70-2.00	0.1-0.2	0.02-0.04	0.0-2.9	0.0-1.0
Shohola-----	0-3	45	43	8-15	1.10-1.40	0.6-2.0	0.08-0.18	0.0-2.9	2.0-4.0
	3-24	45	43	8-15	1.20-1.50	0.6-2.0	0.08-0.18	0.0-2.9	0.0-0.5
	24-72	68	21	8-15	1.70-2.00	0.0-0.2	0.02-0.04	0.0-2.9	0.0-0.5
297186									
Edgemere-----	0-2	---	---	0	0.50-0.90	0.6-2.0	0.23-0.45	0.0-2.9	4.0-20
	2-5	45	43	8-15	1.10-1.40	0.6-2.0	0.12-0.18	0.0-2.9	2.0-8.0
	5-24	45	43	8-15	1.20-1.50	0.6-2.0	0.11-0.18	0.0-2.9	0.0-1.0
	24-66	67	20	8-18	1.70-2.00	0.1-0.2	0.02-0.04	0.0-2.9	0.0-1.0
297188									
Manlius-----	0-5	32	56	6-18	1.10-1.40	0.6-2.0	0.08-0.12	0.0-2.9	2.0-8.0
	5-24	45	43	6-18	1.20-1.50	0.6-2.0	0.08-0.12	0.0-2.9	0.0-1.0
	24-30	45	43	6-18	1.70-1.95	0.6-2.0	0.03-0.09	0.0-2.9	0.0-0.4
	30-40	---	---	0	---	0.0-0.2	0.00-0.00	---	---
Arnot-----	0-3	45	42	8-18	1.10-1.40	0.6-2.0	0.10-0.15	0.0-2.9	2.0-8.0
	3-14	45	42	8-18	1.20-1.50	0.6-2.0	0.08-0.12	0.0-2.9	0.1-3.0
	14-24	---	---	---	---	---	---	---	---

# Soil Survey of Delaware Water Gap National Recreation Area

Table 15.--Physical Soil Properties--Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
297189									
Manlius-----	0-5	32	56	6-18	1.10-1.40	0.6-2.0	0.08-0.12	0.0-2.9	2.0-8.0
	5-24	45	43	6-18	1.20-1.50	0.6-2.0	0.08-0.12	0.0-2.9	0.0-1.0
	24-30	45	43	6-18	1.70-1.95	0.6-2.0	0.03-0.09	0.0-2.9	0.0-0.4
	30-40	---	---	0	---	0.0-0.2	0.00-0.00	---	---
Arnot-----	0-3	45	42	8-18	1.10-1.40	0.6-2.0	0.10-0.15	0.0-2.9	2.0-8.0
	3-14	45	42	8-18	1.20-1.50	0.6-2.0	0.08-0.12	0.0-2.9	0.1-3.0
	14-24	---	---	---	---	---	---	---	0.0-0.0
297190									
Braceville-----	0-11	68	22	5-15	1.15-1.40	2.0-6.0	0.15-0.21	0.0-2.9	2.0-8.0
	11-27	70	22	5-10	1.15-1.45	2.0-6.0	0.07-0.20	0.0-2.9	0.5-4.0
	27-48	70	22	5-10	1.40-1.70	0.1-0.6	0.06-0.10	0.0-2.9	0.0-0.5
	48-70	79	17	2-7	1.20-1.35	2.0-20.0	0.04-0.10	0.0-2.9	0.0-0.5
297191									
Wyalusing-----	0-6	69	16	15-30	1.15-1.40	6.0-20.0	0.14-0.20	0.0-2.9	2.0-6.0
	6-31	67	14	10-30	1.40-1.65	6.0-20.0	0.10-0.16	0.0-2.9	0.1-1.0
	31-70	80	17	2-9	---	6.0-20.0	0.02-0.10	0.0-2.9	0.1-0.5
297192									
Pope-----	0-6	68	22	5-15	1.20-1.40	2.0-6.0	0.10-0.16	0.0-2.9	1.0-4.0
	6-33	68	21	5-18	1.30-1.60	0.6-6.0	0.10-0.18	0.0-2.9	0.2-0.5
	33-70	68	20	5-20	1.30-1.60	0.6-6.0	0.10-0.18	0.0-2.9	0.1-0.8
297193									
Paupack-----	0-3	---	---	0	0.15-0.40	0.2-6.0	0.35-0.45	0.0-2.9	30-50
	3-26	---	---	0	0.80-0.90	0.2-6.0	0.35-0.45	0.0-2.9	30-50
	26-36	---	---	0	1.00-1.20	0.2-2.0	0.20-0.40	0.0-2.9	2.0-10
	36-70	66	23	5-18	1.40-1.60	0.2-2.0	0.11-0.20	0.0-2.9	0.0-2.0
297196									
Freetown-----	0-6	---	---	0	0.10-0.30	0.6-6.0	0.35-0.45	0.0-2.9	50-99
	6-72	---	---	0	0.15-0.30	0.6-6.0	0.35-0.45	0.0-2.9	50-95
297197									
Manlius-----	0-5	32	56	6-18	1.10-1.40	0.6-2.0	0.10-0.18	0.0-2.9	2.0-8.0
	5-24	45	43	6-18	1.20-1.50	0.6-2.0	0.08-0.12	0.0-2.9	0.0-1.0
	24-30	45	43	6-18	1.70-1.95	0.6-2.0	0.03-0.09	0.0-2.9	0.0-0.4
	30-40	---	---	0	---	0.0-0.2	0.00-0.00	---	---
297198									
Manlius-----	0-5	32	56	6-18	1.10-1.40	0.6-2.0	0.10-0.18	0.0-2.9	2.0-8.0
	5-24	45	43	6-18	1.20-1.50	0.6-2.0	0.08-0.12	0.0-2.9	0.0-1.0
	24-30	45	43	6-18	1.70-1.95	0.6-2.0	0.03-0.09	0.0-2.9	0.0-0.4
	30-40	---	---	0	---	0.0-0.2	0.00-0.00	---	---
297201									
Oquaga-----	0-2	43	40	7-27	1.10-1.40	0.6-2.0	0.08-0.17	0.0-2.9	2.0-8.0
	2-26	43	40	7-27	1.20-1.50	0.6-2.0	0.04-0.12	0.0-2.9	0.0-2.0
	26-32	64	19	7-27	1.20-1.50	0.6-2.0	0.04-0.12	0.0-2.9	0.0-2.0
	32-42	---	---	---	---	---	---	---	---
297203									
Delaware-----	0-14	45-70	10-50	2-10	1.15-1.40	2.0-6.0	0.15-0.21	0.0-2.9	2.0-4.0
	14-48	45-90	0-40	2-7	1.15-1.45	2.0-6.0	0.07-0.20	0.0-2.9	0.0-0.5
	48-72	45-90	0-40	2-7	1.25-1.55	6.0-20.0	0.04-0.10	0.0-2.9	0.0-0.5
297204									
Delaware-----	0-14	64	30	2-10	1.15-1.40	2.0-6.0	0.15-0.21	0.0-2.9	2.0-4.0
	14-48	65	31	2-7	1.15-1.45	2.0-6.0	0.07-0.20	0.0-2.9	0.0-0.5
	48-72	65	31	2-7	1.25-1.55	6.0-20.0	0.04-0.10	0.0-2.9	0.0-0.5

# Soil Survey of Delaware Water Gap National Recreation Area

Table 15.--Physical Soil Properties--Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
297205									
Delaware-----	0-14	64	30	2-10	1.15-1.40	2.0-6.0	0.15-0.21	0.0-2.9	2.0-4.0
	14-48	65	31	2-7	1.15-1.45	2.0-6.0	0.07-0.20	0.0-2.9	0.0-0.5
	48-72	65	31	2-7	1.25-1.55	6.0-20.0	0.04-0.10	0.0-2.9	0.0-0.5
297209									
Philo-----	0-6	45	41	10-18	1.20-1.40	0.6-2.0	0.14-0.20	0.0-2.9	2.0-4.0
	6-36	70	16	10-18	1.20-1.40	0.6-2.0	0.10-0.20	0.0-2.9	0.0-0.5
	36-70	---	---	5-18	1.20-1.40	2.0-6.0	0.06-0.10	0.0-2.9	0.0-0.5
297210									
Barbour-----	0-10	71	17	6-18	1.15-1.40	0.6-2.0	0.16-0.21	0.0-2.9	1.0-5.0
	10-38	71	17	6-18	1.15-1.45	2.0-6.0	0.10-0.19	0.0-2.9	0.0-0.5
	38-72	94	1	1-8	1.25-1.55	6.0-20.0	0.02-0.07	0.0-2.9	0.0-0.2
297216									
Wurtsboro-----	0-4	70	16	10-18	1.20-1.40	0.6-2.0	0.10-0.16	0.0-2.9	2.0-4.0
	4-22	70	16	10-18	1.40-1.60	0.6-2.0	0.10-0.14	0.0-2.9	0.0-2.0
	22-70	70	16	10-18	1.60-1.80	0.1-0.2	0.08-0.12	0.0-2.9	0.0-0.5
297217									
Wurtsboro-----	0-4	68	21	5-18	1.20-1.40	0.6-2.0	0.10-0.16	0.0-2.9	2.0-4.0
	4-22	68	21	5-18	1.40-1.60	0.6-2.0	0.10-0.14	0.0-2.9	0.1-2.0
	22-70	68	21	5-18	1.60-1.80	0.1-0.2	0.08-0.12	0.0-2.9	0.0-0.5
297227									
Arnot-----	0-3	45	42	8-18	1.10-1.40	0.6-2.0	0.08-0.12	0.0-2.9	2.0-8.0
	3-10	45	42	8-18	1.20-1.50	0.6-2.0	0.08-0.12	0.0-2.9	0.1-3.0
	10-14	45	42	8-18	1.20-1.50	0.6-2.0	0.08-0.12	0.0-2.9	0.0-2.0
	14-24	---	---	---	---	---	0.00-0.00	---	---
297228									
Arnot-----	0-3	45	42	8-18	1.10-1.40	0.6-2.0	0.08-0.12	0.0-2.9	2.0-8.0
	3-10	45	42	8-18	1.20-1.50	0.6-2.0	0.08-0.12	0.0-2.9	0.1-3.0
	10-14	45	42	8-18	1.20-1.50	0.6-2.0	0.08-0.12	0.0-2.9	0.0-2.0
	14-24	---	---	---	---	---	0.00-0.00	---	---
297229									
Wyoming-----	0-3	67	20	8-18	1.10-1.40	6.0-20.0	0.06-0.14	0.0-2.9	2.0-4.0
	3-33	68	22	5-15	1.10-1.50	6.0-20.0	0.06-0.09	0.0-2.9	0.0-0.5
	33-72	83	11	1-11	1.30-1.60	6.0-20.0	0.02-0.04	0.0-2.9	0.0-0.5
297230									
Wyoming-----	0-3	67	20	8-18	1.10-1.40	6.0-20.0	0.06-0.14	0.0-2.9	2.0-4.0
	3-33	68	22	5-15	1.10-1.50	6.0-20.0	0.06-0.09	0.0-2.9	0.0-0.5
	33-72	83	11	1-11	1.30-1.60	6.0-20.0	0.02-0.04	0.0-2.9	0.0-0.5
297231									
Wyoming-----	0-3	67	20	8-18	1.10-1.40	6.0-20.0	0.06-0.14	0.0-2.9	2.0-4.0
	3-33	68	22	5-15	1.10-1.50	6.0-20.0	0.06-0.09	0.0-2.9	0.0-0.5
	33-72	83	11	1-11	1.30-1.60	6.0-20.0	0.02-0.04	0.0-2.9	0.0-0.5
297236									
Suncook-----	0-10	81	17	1-3	1.10-1.30	6.0-20.0	0.07-0.12	0.0-2.9	2.0-5.0
	10-70	97	2	0-3	1.20-1.50	6.0-20.0	0.01-0.10	0.0-2.9	0.1-0.2
297237									
Mardin-----	0-8	30	56	10-18	1.10-1.40	0.6-2.0	0.11-0.17	0.0-2.9	3.0-7.0
	8-17	45	41	10-18	1.20-1.50	0.6-2.0	0.09-0.16	0.0-2.9	0.0-1.0
	17-21	45	41	10-18	1.20-1.50	0.6-2.0	0.09-0.16	0.0-2.9	0.0-1.0
	21-30	45	41	10-18	1.50-1.90	0.0-0.2	0.01-0.03	0.0-2.9	0.1-0.5
	30-60	45	41	10-18	1.50-1.90	0.0-0.2	0.01-0.03	0.0-2.9	0.1-0.5
	60-80	45	41	10-18	1.65-1.95	0.0-0.2	0.01-0.03	0.0-2.9	0.0-1.0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 15.--Physical Soil Properties--Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
297238									
Mardin-----	0-8	30	56	10-18	1.10-1.40	0.6-2.0	0.11-0.17	0.0-2.9	3.0-7.0
	8-17	45	41	10-18	1.20-1.50	0.6-2.0	0.09-0.16	0.0-2.9	0.0-1.0
	17-21	45	41	10-18	1.20-1.50	0.6-2.0	0.09-0.16	0.0-2.9	0.0-1.0
	21-30	45	41	10-18	1.50-1.90	0.0-0.2	0.01-0.03	0.0-2.9	0.1-0.5
	30-60	45	41	10-18	1.50-1.90	0.0-0.2	0.01-0.03	0.0-2.9	0.1-0.5
	60-80	45	41	10-18	1.65-1.95	0.0-0.2	0.01-0.03	0.0-2.9	0.0-1.0
297239									
Mardin-----	0-8	45	41	10-18	1.10-1.40	0.6-2.0	0.11-0.17	0.0-2.9	3.0-7.0
	8-17	45	41	10-18	1.20-1.50	0.6-2.0	0.09-0.16	0.0-2.9	0.0-1.0
	17-21	45	41	10-18	1.20-1.50	0.6-2.0	0.09-0.16	0.0-2.9	0.0-1.0
	21-30	45	41	10-18	1.50-1.90	0.0-0.2	0.01-0.03	0.0-2.9	0.1-0.5
	30-60	45	41	10-18	1.50-1.90	0.0-0.2	0.01-0.03	0.0-2.9	0.1-0.5
	60-80	45	41	10-18	1.65-1.95	0.0-0.2	0.01-0.03	0.0-2.9	0.0-1.0
297240									
Mardin-----	0-8	45	41	10-18	1.10-1.40	0.6-2.0	0.11-0.17	0.0-2.9	3.0-7.0
	8-17	45	41	10-18	1.20-1.50	0.6-2.0	0.09-0.16	0.0-2.9	0.0-1.0
	17-21	45	41	10-18	1.20-1.50	0.6-2.0	0.09-0.16	0.0-2.9	0.0-1.0
	21-30	45	41	10-18	1.50-1.90	0.0-0.2	0.01-0.03	0.0-2.9	0.1-0.5
	30-60	45	41	10-18	1.50-1.90	0.0-0.2	0.01-0.03	0.0-2.9	0.1-0.5
	60-80	45	41	10-18	1.65-1.95	0.0-0.2	0.01-0.03	0.0-2.9	0.0-1.0
297241									
Unadilla-----	0-13	21	69	5-15	1.20-1.50	0.6-2.0	0.18-0.21	0.0-2.9	2.0-8.0
	13-49	21	70	3-15	1.20-1.50	0.6-2.0	0.17-0.20	0.0-2.9	0.0-1.0
	49-80	29	68	1-5	1.20-1.50	0.6-2.0	0.15-0.18	0.0-2.9	0.0-1.0
297242									
Shohola-----	0-3	45	43	8-15	1.10-1.40	0.6-2.0	0.08-0.18	0.0-2.9	2.0-4.0
	3-24	45	43	8-15	1.20-1.50	0.6-2.0	0.08-0.18	0.0-2.9	0.0-0.5
	24-72	68	21	8-15	1.70-2.00	0.0-0.2	0.02-0.04	0.0-2.9	0.0-0.5
Edgemere-----	0-2	---	---	0	0.50-0.90	0.6-2.0	0.23-0.45	0.0-2.9	4.0-20
	2-5	45	43	8-15	1.10-1.40	0.6-2.0	0.12-0.18	0.0-2.9	2.0-8.0
	5-24	66	23	8-15	1.20-1.50	0.6-2.0	0.11-0.18	0.0-2.9	0.0-1.0
	24-66	67	20	8-18	1.70-2.00	0.1-0.2	0.02-0.04	0.0-2.9	0.0-1.0
297243									
Shohola-----	0-3	45	43	8-15	1.10-1.40	0.6-2.0	0.08-0.18	0.0-2.9	2.0-4.0
	3-24	45	43	8-15	1.20-1.50	0.6-2.0	0.08-0.18	0.0-2.9	0.0-0.5
	24-72	68	21	8-15	1.70-2.00	0.0-0.2	0.02-0.04	0.0-2.9	0.0-0.5
Edgemere-----	0-2	---	---	0	0.50-0.90	0.6-2.0	0.23-0.45	0.0-2.9	4.0-20
	2-5	45	43	8-15	1.10-1.40	0.6-2.0	0.12-0.18	0.0-2.9	2.0-8.0
	5-24	66	23	8-15	1.20-1.50	0.6-2.0	0.11-0.18	0.0-2.9	0.0-1.0
	24-66	67	20	8-18	1.70-2.00	0.1-0.2	0.02-0.04	0.0-2.9	0.0-1.0
297244									
Lordstown-----	0-3	45	42	8-18	1.10-1.40	0.6-2.0	0.11-0.17	0.0-2.9	3.0-8.0
	3-28	68	16	5-26	1.20-1.50	0.6-2.0	0.10-0.16	0.0-2.9	0.1-2.0
	28-30	66	23	5-18	1.20-1.50	0.6-2.0	0.05-0.14	0.0-2.9	0.0-1.0
	30-40	---	---	---	---	---	---	---	---
Swartswood-----	0-4	68	16	12-20	1.20-1.40	0.6-2.0	0.08-0.12	0.0-2.9	5.0-10
	4-32	69	16	10-20	1.20-1.50	0.6-2.0	0.08-0.12	0.0-2.9	0.0-1.0
	32-70	70	16	8-20	1.40-1.80	0.1-0.6	0.06-0.10	0.0-2.9	0.0-0.5
297247									
Chenango-----	0-10	70	22	5-12	1.10-1.30	0.6-6.0	0.08-0.16	0.0-2.9	2.0-6.0
	10-29	70	22	5-12	1.10-1.50	0.6-6.0	0.07-0.15	0.0-2.9	0.0-1.0
	29-70	78	18	1-6	1.30-1.60	6.0-20.0	0.01-0.05	0.0-2.9	0.0-1.0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 15.--Physical Soil Properties--Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
297248									
Chenango-----	0-10	70	22	5-12	1.10-1.30	0.6-6.0	0.08-0.16	0.0-2.9	2.0-6.0
	10-29	70	22	5-12	1.10-1.50	0.6-6.0	0.07-0.15	0.0-2.9	0.0-1.0
	29-70	78	18	1-6	1.30-1.60	6.0-20.0	0.01-0.05	0.0-2.9	0.0-1.0
297249									
Chenango-----	0-10	70	22	5-12	1.10-1.30	0.6-6.0	0.08-0.16	0.0-2.9	2.0-6.0
	10-29	70	22	5-12	1.10-1.50	0.6-6.0	0.07-0.15	0.0-2.9	0.0-1.0
	29-70	78	18	1-6	1.30-1.60	6.0-20.0	0.01-0.05	0.0-2.9	0.0-1.0
297253									
Craigsville-----	0-5	46	44	5-15	1.20-1.40	2.0-20.0	0.07-0.15	0.0-2.9	2.0-5.0
	5-27	67	23	5-15	1.30-1.60	2.0-20.0	0.06-0.15	0.0-2.9	0.0-0.5
	27-77	84	9	5-10	1.35-1.55	6.0-20.0	0.04-0.09	0.0-2.9	0.0-0.5
Wyoming-----	0-3	67	20	8-18	1.10-1.40	6.0-20.0	0.06-0.14	0.0-2.9	2.0-4.0
	3-33	68	22	5-15	1.10-1.50	6.0-20.0	0.06-0.09	0.0-2.9	0.0-0.5
	33-72	83	11	1-11	1.30-1.60	6.0-20.0	0.02-0.04	0.0-2.9	0.0-0.5
298049									
Wurtsboro, extremely stony	0-2	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	2-3	35-47	35-50	10-18	1.24-1.68	0.6-5.9	0.10-0.16	0.0-0.2	1.8-5.2
	3-5	35-68	17-50	2-18	1.29-1.42	0.6-5.9	0.10-0.16	0.0-0.1	0.0-1.0
	5-6	35-68	17-50	2-18	1.29-1.42	0.6-5.9	0.10-0.16	0.0-0.1	0.5-2.0
	6-18	35-76	15-50	2-18	1.29-1.70	0.6-5.9	0.10-0.14	0.0-0.1	0.0-1.0
	18-24	35-76	15-50	2-18	1.29-1.70	0.6-5.9	0.10-0.14	0.0-0.1	0.0-1.0
	24-30	35-76	15-50	2-18	1.64-1.98	0.1-0.2	0.08-0.12	0.0-0.1	0.0-0.5
	30-60	35-76	15-50	2-18	1.64-1.98	0.1-0.2	0.08-0.12	0.0-0.1	0.0-0.5
298050									
Wurtsboro, extremely stony	0-2	0-68	0-44	0-17	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	2-3	53-68	17-44	2-17	1.24-1.68	0.6-5.9	0.10-0.16	0.0-0.2	1.8-5.2
	3-4	35-68	17-50	2-18	1.29-1.42	0.6-5.9	0.10-0.16	0.0-0.1	0.0-1.0
	4-6	35-68	17-50	2-18	1.29-1.42	0.6-5.9	0.10-0.16	0.0-0.1	0.5-2.0
	6-18	35-76	15-50	2-18	1.29-1.70	0.6-5.9	0.10-0.14	0.0-0.1	0.0-1.0
	18-24	35-76	15-50	2-18	1.29-1.70	0.6-5.9	0.10-0.14	0.0-0.1	0.0-1.0
	24-33	35-76	15-50	2-18	1.64-1.98	0.1-0.2	0.08-0.12	0.0-0.1	0.0-0.5
	33-60	35-76	15-50	2-18	1.64-1.98	0.1-0.2	0.08-0.12	0.0-0.1	0.0-0.5
Swartswood, extremely stony	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	35-47	35-50	10-18	1.29-1.52	0.6-5.9	0.08-0.12	0.0-0.2	1.8-5.2
	2-3	53-76	15-44	2-17	1.29-1.51	0.6-5.9	0.08-0.12	0.0-0.1	0.0-1.0
	3-4	53-76	15-44	2-17	1.29-1.51	0.6-5.9	0.08-0.12	0.0-0.1	0.5-2.0
	4-21	35-76	15-50	2-18	1.29-1.70	0.6-5.9	0.08-0.12	0.0-0.1	0.0-1.0
	21-32	35-76	15-50	8-18	1.64-1.98	0.1-0.6	0.06-0.10	0.0-0.1	0.0-0.5
	32-60	35-76	15-50	8-18	1.64-1.98	0.1-0.6	0.06-0.10	0.0-0.1	0.0-0.5
298051									
Wurtsboro, extremely stony	0-2	0-68	0-44	0-17	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	2-3	53-68	17-44	2-17	1.24-1.68	0.6-5.9	0.10-0.16	0.0-0.2	1.8-5.2
	3-4	35-68	17-50	2-18	1.29-1.42	0.6-5.9	0.10-0.16	0.0-0.1	0.0-1.0
	4-6	35-68	17-50	2-18	1.29-1.42	0.6-5.9	0.10-0.16	0.0-0.1	0.5-2.0
	6-18	35-76	15-50	2-18	1.29-1.70	0.6-5.9	0.10-0.14	0.0-0.1	0.0-1.0
	18-24	35-76	15-50	2-18	1.29-1.70	0.6-5.9	0.10-0.14	0.0-0.1	0.0-1.0
	24-33	35-76	15-50	2-18	1.64-1.98	0.1-0.2	0.08-0.12	0.0-0.1	0.0-0.5
	33-60	35-76	15-50	2-18	1.64-1.98	0.1-0.2	0.08-0.12	0.0-0.1	0.0-0.5

# Soil Survey of Delaware Water Gap National Recreation Area

Table 15.--Physical Soil Properties--Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
298050 Swartswood, extremely stony	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	35-47	35-50	10-18	1.29-1.52	0.6-5.9	0.08-0.12	0.0-0.2	1.8-5.2
	2-3	53-76	15-44	2-17	1.29-1.51	0.6-5.9	0.08-0.12	0.0-0.1	0.0-1.0
	3-4	53-76	15-44	2-17	1.29-1.51	0.6-5.9	0.08-0.12	0.0-0.1	0.5-2.0
	4-21	35-76	15-50	2-18	1.29-1.70	0.6-5.9	0.08-0.12	0.0-0.1	0.0-1.0
	21-32	35-76	15-50	8-18	1.64-1.98	0.1-0.6	0.06-0.10	0.0-0.1	0.0-0.5
	32-60	35-76	15-50	8-18	1.64-1.98	0.1-0.6	0.06-0.10	0.0-0.1	0.0-0.5
298075 Colonie-----	0-2	76-79	21-24	0-1	1.24-1.45	2.0-20.0	0.09-0.10	0.0-0.1	1.0-2.0
	2-11	76-95	21-24	0-1	1.24-1.45	2.0-20.0	0.09-0.10	0.0-0.1	1.0-2.0
	11-24	76-98	2-24	0-1	1.29-1.51	2.0-20.0	0.06-0.08	0.0-0.1	0.0-0.5
	24-40	76-98	2-24	0-1	1.29-1.51	2.0-20.0	0.06-0.08	0.0-0.1	0.0-0.5
	40-62	76-98	2-24	0-1	1.29-1.51	2.0-20.0	0.06-0.08	0.0-0.1	0.0-0.5
298188 Lackawanna, extremely stony	0-2	0-68	0-44	0-17	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	2-3	53-68	17-44	2-17	1.30-1.52	0.6-2.0	0.10-0.16	0.0-0.1	3.0-6.0
	3-7	53-68	17-44	2-17	1.29-1.42	0.6-2.0	0.10-0.16	0.0-0.1	0.0-2.0
	7-8	53-68	17-44	2-17	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	2.0-6.0
	8-16	16-68	17-65	2-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.0-2.0
	16-24	16-68	17-65	2-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.0-2.0
	24-29	16-76	15-65	2-18	1.64-1.98	0.1-0.2	0.06-0.12	0.0-0.1	0.0-0.5
	29-60	16-76	15-65	2-18	1.64-1.98	0.1-0.2	0.06-0.12	0.0-0.1	0.0-0.5
298189 Lackawanna, extremely stony	0-2	0-68	0-44	0-17	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	2-3	53-68	17-44	2-17	1.30-1.52	0.6-2.0	0.10-0.16	0.0-0.1	3.0-6.0
	3-7	53-68	17-44	2-17	1.29-1.42	0.6-2.0	0.10-0.16	0.0-0.1	0.0-2.0
	7-8	53-68	17-44	2-17	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	2.0-6.0
	8-16	16-68	17-65	2-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.0-2.0
	16-24	16-68	17-65	2-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.0-2.0
	24-29	16-76	15-65	2-18	1.64-1.98	0.1-0.2	0.06-0.12	0.0-0.1	0.0-0.5
	29-60	16-76	15-65	2-18	1.64-1.98	0.1-0.2	0.06-0.12	0.0-0.1	0.0-0.5
298221 Swartswood, extremely stony	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	35-47	35-50	10-18	1.29-1.52	0.6-5.9	0.08-0.12	0.0-0.2	1.8-5.2
	2-3	53-76	15-44	2-17	1.29-1.51	0.6-5.9	0.08-0.12	0.0-0.1	0.0-1.0
	3-4	53-76	15-44	2-17	1.29-1.51	0.6-5.9	0.08-0.12	0.0-0.1	0.5-2.0
	4-21	35-76	15-50	2-18	1.29-1.70	0.6-5.9	0.08-0.12	0.0-0.1	0.0-1.0
	21-32	35-76	15-50	8-18	1.64-1.98	0.1-0.6	0.06-0.10	0.0-0.1	0.0-0.5
	32-60	35-76	15-50	8-18	1.64-1.98	0.1-0.6	0.06-0.10	0.0-0.1	0.0-0.5
298222 Swartswood, extremely stony	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	35-47	35-50	10-18	1.29-1.52	0.6-5.9	0.08-0.12	0.0-0.2	1.8-5.2
	2-3	53-76	15-44	2-17	1.29-1.51	0.6-5.9	0.08-0.12	0.0-0.1	0.0-1.0
	3-4	53-76	15-44	2-17	1.29-1.51	0.6-5.9	0.08-0.12	0.0-0.1	0.5-2.0
	4-21	35-76	15-50	2-18	1.29-1.70	0.6-5.9	0.08-0.12	0.0-0.1	0.0-1.0
	21-32	35-76	15-50	8-18	1.64-1.98	0.1-0.6	0.06-0.10	0.0-0.1	0.0-0.5
	32-60	35-76	15-50	8-18	1.64-1.98	0.1-0.6	0.06-0.10	0.0-0.1	0.0-0.5

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Table 15.--Physical Soil Properties--Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
298223 Swartswood, extremely stony	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	35-47	35-50	10-18	1.29-1.52	0.6-5.9	0.08-0.12	0.0-0.2	1.8-5.2
	2-3	53-76	15-44	2-17	1.29-1.51	0.6-5.9	0.08-0.12	0.0-0.1	0.0-1.0
	3-4	53-76	15-44	2-17	1.29-1.51	0.6-5.9	0.08-0.12	0.0-0.1	0.5-2.0
	4-21	35-76	15-50	2-18	1.29-1.70	0.6-5.9	0.08-0.12	0.0-0.1	0.0-1.0
	21-32	35-76	15-50	8-18	1.64-1.98	0.1-0.6	0.06-0.10	0.0-0.1	0.0-0.5
	32-60	35-76	15-50	8-18	1.64-1.98	0.1-0.6	0.06-0.10	0.0-0.1	0.0-0.5
298255 Delaware, rarely flooded	0-1	0-73	0-44	0-17	0.13-0.23	2.0-5.9	0.35-0.45	0.0-0.0	70-100
	1-4	53-73	17-44	2-17	1.24-1.52	2.0-5.9	0.15-0.21	0.0-0.2	2.0-4.5
	4-11	53-73	17-44	2-17	1.24-1.52	2.0-5.9	0.15-0.21	0.0-0.2	0.5-2.0
	11-20	53-68	17-44	2-17	1.29-1.42	2.0-5.9	0.07-0.20	0.0-0.1	0.0-0.5
	20-33	53-68	17-44	2-17	1.29-1.42	2.0-5.9	0.07-0.20	0.0-0.1	0.0-0.5
	33-41	53-68	17-44	2-17	1.29-1.42	2.0-5.9	0.07-0.20	0.0-0.1	0.0-0.5
	41-56	35-85	12-49	2-17	1.29-1.42	5.9-20.0	0.07-0.20	0.0-0.1	0.0-0.5
	56-60	35-85	12-49	2-17	1.29-1.42	5.9-20.0	0.05-0.15	0.0-0.1	0.0-0.5
298256 Delaware, rarely flooded	0-1	0-73	0-44	0-17	0.13-0.23	2.0-5.9	0.35-0.45	0.0-0.0	70-100
	1-4	53-73	17-44	2-17	1.24-1.52	2.0-5.9	0.15-0.21	0.0-0.2	2.0-4.5
	4-11	53-73	17-44	2-17	1.24-1.52	2.0-5.9	0.15-0.21	0.0-0.2	0.5-2.0
	11-20	53-68	17-44	2-17	1.29-1.42	2.0-5.9	0.07-0.20	0.0-0.1	0.0-0.5
	20-33	53-68	17-44	2-17	1.29-1.42	2.0-5.9	0.07-0.20	0.0-0.1	0.0-0.5
	33-41	53-68	17-44	2-17	1.29-1.42	2.0-5.9	0.07-0.20	0.0-0.1	0.0-0.5
	41-56	35-85	12-49	2-17	1.29-1.42	5.9-20.0	0.07-0.20	0.0-0.1	0.0-0.5
	56-60	35-85	12-49	2-17	1.29-1.42	5.9-20.0	0.05-0.15	0.0-0.1	0.0-0.5
298257 Wallpack-----	0-3	16-32	51-65	13-17	1.34-1.54	0.6-5.9	0.16-0.20	0.0-0.1	1.3-3.3
	3-9	16-32	51-65	13-17	1.34-1.54	0.6-5.9	0.12-0.20	0.0-0.1	0.8-2.3
	9-16	11-76	15-65	2-17	1.29-1.73	0.6-5.9	0.12-0.16	0.0-0.1	0.0-0.5
	16-25	11-76	15-65	2-20	1.71-1.98	0.0-0.6	0.07-0.12	0.0-0.1	0.0-0.3
	25-65	11-76	15-65	2-20	1.71-1.98	0.0-0.6	0.07-0.14	0.0-0.1	0.0-0.2
298258 Wallpack-----	0-3	16-32	51-65	13-17	1.34-1.54	0.6-5.9	0.16-0.20	0.0-0.1	1.3-3.3
	3-9	16-32	51-65	13-17	1.34-1.54	0.6-5.9	0.12-0.20	0.0-0.1	0.8-2.3
	9-16	11-76	15-65	2-17	1.29-1.73	0.6-5.9	0.12-0.16	0.0-0.1	0.0-0.5
	16-25	11-76	15-65	2-20	1.71-1.98	0.0-0.6	0.07-0.12	0.0-0.1	0.0-0.3
	25-65	11-76	15-65	2-20	1.71-1.98	0.0-0.6	0.07-0.14	0.0-0.1	0.0-0.2
298259 Wallpack, extremely stony	0-1	0-32	0-65	0-17	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	16-32	51-65	13-17	1.34-1.54	0.6-5.9	0.18-0.23	0.0-0.1	1.0-20
	2-5	16-76	15-65	9-17	1.16-1.50	0.6-5.9	0.14-0.20	0.0-0.1	0.5-2.5
	5-18	11-76	15-65	9-17	1.29-1.73	0.6-5.9	0.14-0.18	0.0-0.1	0.0-0.5
	18-24	11-76	15-65	9-20	1.64-1.98	0.0-0.6	0.08-0.16	0.0-1.5	0.0-0.3
	24-42	11-76	15-65	9-20	1.64-1.98	0.0-0.6	0.08-0.14	0.0-1.5	0.0-0.3
	42-60	11-76	15-65	9-20	1.64-1.98	0.0-0.6	0.08-0.14	0.0-1.5	0.0-0.3

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Table 15.--Physical Soil Properties--Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
298260 Wallpack, extremely stony	0-1	0-32	0-65	0-17	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	16-32	51-65	13-17	1.34-1.54	0.6-5.9	0.18-0.23	0.0-0.1	1.0-20
	2-5	16-76	15-65	9-17	1.16-1.50	0.6-5.9	0.14-0.20	0.0-0.1	0.5-2.5
	5-18	11-76	15-65	9-17	1.29-1.73	0.6-5.9	0.14-0.18	0.0-0.1	0.0-0.5
	18-24	11-76	15-65	9-20	1.64-1.98	0.0-0.6	0.08-0.16	0.0-1.5	0.0-0.3
	24-42	11-76	15-65	9-20	1.64-1.98	0.0-0.6	0.08-0.14	0.0-1.5	0.0-0.3
	42-60	11-76	15-65	9-20	1.64-1.98	0.0-0.6	0.08-0.14	0.0-1.5	0.0-0.3
298261 Wallpack-----	0-3	16-32	51-65	13-17	1.34-1.54	0.6-5.9	0.16-0.20	0.0-0.1	1.3-3.3
	3-9	16-32	51-65	13-17	1.34-1.54	0.6-5.9	0.12-0.20	0.0-0.1	0.8-2.3
	9-16	11-76	15-65	2-17	1.29-1.73	0.6-5.9	0.12-0.16	0.0-0.1	0.0-0.5
	16-25	11-76	15-65	2-20	1.71-1.98	0.0-0.6	0.07-0.12	0.0-0.1	0.0-0.3
	25-65	11-76	15-65	2-20	1.71-1.98	0.0-0.6	0.07-0.14	0.0-0.1	0.0-0.2
298262 Wallpack, extremely stony	0-1	0-32	0-65	0-17	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	16-32	51-65	13-17	1.34-1.54	0.6-5.9	0.18-0.23	0.0-0.1	1.0-20
	2-5	16-76	15-65	9-17	1.16-1.50	0.6-5.9	0.14-0.20	0.0-0.1	0.5-2.5
	5-18	11-76	15-65	9-17	1.29-1.73	0.6-5.9	0.14-0.18	0.0-0.1	0.0-0.5
	18-24	11-76	15-65	9-20	1.64-1.98	0.0-0.6	0.08-0.16	0.0-1.5	0.0-0.3
	24-42	11-76	15-65	9-20	1.64-1.98	0.0-0.6	0.08-0.14	0.0-1.5	0.0-0.3
	42-60	11-76	15-65	9-20	1.64-1.98	0.0-0.6	0.08-0.14	0.0-1.5	0.0-0.3
298265 Venango, extremely stony	0-1	0-28	0-55	0-22	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-6	23-28	51-55	21-22	1.03-1.54	0.6-2.0	0.17-0.20	0.0-0.2	2.0-4.0
	6-16	5-38	44-59	18-30	1.29-1.62	0.6-2.0	0.16-0.18	0.0-0.1	0.3-0.5
	16-22	5-38	44-59	18-35	1.64-1.86	0.0-0.2	0.06-0.09	0.0-0.1	0.2-0.4
	22-34	5-38	44-59	18-35	1.64-1.86	0.0-0.2	0.06-0.09	0.0-0.1	0.2-0.4
	34-60	5-38	44-59	18-35	1.64-1.86	0.0-0.2	0.08-0.12	0.0-0.1	0.1-0.3
298266 Venango, extremely stony	0-1	0-28	0-55	0-22	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-6	23-28	51-55	21-22	1.03-1.54	0.6-2.0	0.17-0.20	0.0-0.2	2.0-4.0
	6-16	5-38	44-59	18-30	1.29-1.62	0.6-2.0	0.16-0.18	0.0-0.1	0.3-0.5
	16-22	5-38	44-59	18-39	1.64-1.86	0.0-0.2	0.06-0.09	0.0-0.1	0.2-0.4
	22-34	5-38	44-59	18-39	1.64-1.86	0.0-0.2	0.06-0.09	0.0-0.1	0.2-0.4
	34-60	5-38	44-59	18-39	1.64-1.86	0.0-0.2	0.08-0.12	0.0-0.1	0.1-0.3
298409 Swartswood, extremely stony	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	35-47	35-50	10-18	1.29-1.52	0.6-5.9	0.08-0.12	0.0-0.2	1.8-5.2
	2-3	53-76	15-44	2-17	1.29-1.51	0.6-5.9	0.08-0.12	0.0-0.1	0.0-1.0
	3-4	53-76	15-44	2-17	1.29-1.51	0.6-5.9	0.08-0.12	0.0-0.1	0.5-2.0
	4-21	35-76	15-50	2-18	1.29-1.70	0.6-5.9	0.08-0.12	0.0-0.1	0.0-1.0
	21-32	35-76	15-50	8-18	1.64-1.98	0.1-0.6	0.06-0.10	0.0-0.1	0.0-0.5
	32-60	35-76	15-50	8-18	1.64-1.98	0.1-0.6	0.06-0.10	0.0-0.1	0.0-0.5



# Soil Survey of Delaware Water Gap National Recreation Area

Table 15.--Physical Soil Properties--Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
298411 Swartswood, extremely stony	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	35-47	35-50	10-18	1.29-1.52	0.6-5.9	0.08-0.12	0.0-0.2	1.8-5.2
	2-3	53-76	15-44	2-17	1.29-1.51	0.6-5.9	0.08-0.12	0.0-0.1	0.0-1.0
	3-4	53-76	15-44	2-17	1.29-1.51	0.6-5.9	0.08-0.12	0.0-0.1	0.5-2.0
	4-21	35-76	15-50	2-18	1.29-1.70	0.6-5.9	0.08-0.12	0.0-0.1	0.0-1.0
	21-32	35-76	15-50	8-18	1.64-1.98	0.1-0.6	0.06-0.10	0.0-0.1	0.0-0.5
	32-60	35-76	15-50	8-18	1.64-1.98	0.1-0.6	0.06-0.10	0.0-0.1	0.0-0.5
298413 Swartswood, extremely stony	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	35-47	35-50	10-18	1.29-1.52	0.6-5.9	0.08-0.12	0.0-0.2	1.8-5.2
	2-3	53-76	15-44	2-17	1.29-1.51	0.6-5.9	0.08-0.12	0.0-0.1	0.0-1.0
	3-4	53-76	15-44	2-17	1.29-1.51	0.6-5.9	0.08-0.12	0.0-0.1	0.5-2.0
	4-21	35-76	15-50	2-18	1.29-1.70	0.6-5.9	0.08-0.12	0.0-0.1	0.0-1.0
	21-32	35-76	15-50	8-18	1.64-1.98	0.1-0.6	0.06-0.10	0.0-0.1	0.0-0.5
	32-60	35-76	15-50	8-18	1.64-1.98	0.1-0.6	0.06-0.10	0.0-0.1	0.0-0.5
318498 Hazen, very stony-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-10	35-47	35-50	10-18	1.30-1.52	0.6-5.9	0.12-0.18	0.0-0.2	1.8-5.2
	10-18	61-76	15-26	5-14	1.50-1.57	0.6-5.9	0.10-0.14	0.0-0.1	0.2-1.0
	18-29	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.08	0.0-0.1	0.1-0.5
	29-41	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.08	0.0-0.1	0.0-0.5
	41-60	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.08	0.0-0.1	0.0-0.5
Hoosic, very stony-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-9	35-47	35-50	10-18	1.30-1.52	2.0-20.0	0.11-0.16	0.0-0.2	1.8-5.2
	9-21	35-76	15-50	5-18	1.45-1.57	2.0-20.0	0.05-0.14	0.0-0.1	0.2-1.0
	21-27	82-98	2-13	0-7	0.67-1.58	20.0-99.9	0.01-0.05	0.0-0.1	0.0-0.5
	27-37	82-98	2-13	0-7	0.67-1.58	20.0-99.9	0.01-0.05	0.0-0.1	0.0-0.5
	37-49	82-98	2-13	0-7	0.67-1.58	20.0-99.9	0.01-0.05	0.0-0.1	0.0-0.5
	49-60	82-98	2-13	0-7	0.67-1.58	20.0-99.9	0.01-0.05	0.0-0.1	0.0-0.5
318533 Hazen, very stony-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-10	35-47	35-50	10-18	1.30-1.52	0.6-5.9	0.12-0.18	0.0-0.2	1.8-5.2
	10-18	61-76	15-26	5-14	1.50-1.57	0.6-5.9	0.10-0.14	0.0-0.1	0.2-1.0
	18-29	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.08	0.0-0.1	0.1-0.5
	29-41	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.08	0.0-0.1	0.0-0.5
	41-60	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.08	0.0-0.1	0.0-0.5
Hoosic, very stony-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-9	35-47	35-50	10-18	1.30-1.52	2.0-20.0	0.11-0.16	0.0-0.2	1.8-5.2
	9-21	35-76	15-50	5-18	1.45-1.57	2.0-20.0	0.05-0.14	0.0-0.1	0.2-1.0
	21-27	82-98	2-13	0-7	0.67-1.58	20.0-99.9	0.01-0.05	0.0-0.1	0.0-0.5
	27-37	82-98	2-13	0-7	0.67-1.58	20.0-99.9	0.01-0.05	0.0-0.1	0.0-0.5
	37-49	82-98	2-13	0-7	0.67-1.58	20.0-99.9	0.01-0.05	0.0-0.1	0.0-0.5
	49-60	82-98	2-13	0-7	0.67-1.58	20.0-99.9	0.01-0.05	0.0-0.1	0.0-0.5
319783 Catden-----	0-2	0-30	0-55	0-22	0.13-0.23	2.0-5.9	0.35-0.45	0.0-0.0	70-100
	2-13	0-30	0-55	0-22	0.13-0.23	0.2-5.9	0.35-0.45	0.0-0.0	70-100
	13-20	0-30	0-55	0-22	0.13-0.23	0.2-5.9	0.35-0.45	0.0-0.0	70-100
	20-32	0-30	0-55	0-22	0.13-0.23	0.2-5.9	0.35-0.45	0.0-0.0	70-100
	32-60	0-30	0-55	0-22	0.13-0.23	0.2-5.9	0.35-0.45	0.0-0.0	70-100

# Soil Survey of Delaware Water Gap National Recreation Area

Table 15.--Physical Soil Properties--Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
319784									
Fredon, very stony-----	0-1	0-32	0-65	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-8	16-32	51-65	13-18	1.34-1.54	0.2-2.0	0.16-0.20	0.0-0.1	3.0-5.0
	8-14	16-71	17-65	2-18	1.42-1.59	0.2-2.0	0.12-0.20	0.0-0.1	0.5-1.0
	14-18	16-71	17-65	2-18	1.42-1.59	0.2-2.0	0.12-0.20	0.0-0.1	0.5-1.0
	18-23	16-71	17-65	2-18	1.42-1.59	0.2-2.0	0.12-0.20	0.0-0.1	0.5-1.0
	23-31	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.06	0.0-0.1	0.0-0.5
	31-36	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.06	0.0-0.1	0.0-0.5
	36-45	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.06	0.0-0.1	0.0-0.5
	45-55	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.06	0.0-0.1	0.0-0.5
	55-60	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.06	0.0-0.1	0.0-0.5
Halsey, very stony-----	0-1	0-32	0-65	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-5	16-32	51-65	13-18	1.34-1.54	0.6-5.9	0.14-0.24	0.0-0.1	3.0-5.0
	5-11	16-32	51-65	13-18	1.34-1.54	0.6-5.9	0.14-0.24	0.0-0.1	3.0-5.0
	11-20	16-71	17-65	2-18	1.42-1.59	0.6-5.9	0.12-0.18	0.0-0.1	0.5-1.5
	20-25	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.07	0.0-0.1	0.0-0.5
	25-35	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.07	0.0-0.1	0.0-0.5
	35-49	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.07	0.0-0.1	0.0-0.5
	49-56	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.07	0.0-0.1	0.0-0.5
	56-60	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.07	0.0-0.1	0.0-0.5
543222									
Andover, extremely stony	0-8	43	38	10-30	1.20-1.40	0.6-2.0	0.08-0.20	0.0-2.9	1.0-4.0
	8-17	34	38	18-35	1.20-1.40	0.6-2.0	0.08-0.12	0.0-2.9	0.0-0.5
	17-53	34	37	18-35	1.30-1.60	0.1-0.2	0.06-0.10	0.0-2.9	0.0-0.5
	53-65	38	36	18-40	1.40-1.70	0.1-0.6	0.08-0.12	0.0-2.9	0.0-0.5
Buchanan, extremely stony	0-6	43	38	10-27	1.20-1.40	0.6-2.0	0.11-0.16	0.0-2.9	2.0-4.0
	6-23	39	37	18-30	1.30-1.60	0.6-2.0	0.10-0.16	0.0-2.9	0.0-0.5
	23-47	38	36	18-45	1.40-1.70	0.1-0.2	0.06-0.10	0.0-2.9	0.0-0.5
	47-61	38	36	18-45	1.40-1.70	0.1-0.2	0.06-0.10	0.0-2.9	0.0-0.1
543243									
Berks-----	0-10	45	41	5-23	1.20-1.50	0.6-6.0	0.08-0.12	0.0-2.9	2.0-4.0
	10-26	27	54	5-32	1.20-1.60	0.6-6.0	0.04-0.10	0.0-2.9	0.0-0.5
	26-33	46	42	5-20	1.20-1.60	2.0-6.0	0.04-0.10	0.0-2.9	0.0-0.5
	33-43	---	---	---	---	0.2-20.0	0.00-0.00	---	---
Weikert-----	0-8	26	53	15-27	1.20-1.40	2.0-6.0	0.08-0.14	0.0-2.9	1.0-4.0
	8-15	26	53	15-27	1.20-1.40	2.0-6.0	0.04-0.08	0.0-2.9	0.0-0.5
	15-18	26	53	15-27	1.20-1.40	2.0-6.0	0.04-0.08	0.0-2.9	0.0-0.5
	18-20	---	---	---	---	0.6-20.0	---	---	---
543246									
Buchanan-----	0-7	20-50	30-60	10-27	1.20-1.40	0.6-2.0	0.12-0.18	0.0-2.9	1.0-3.0
	7-21	20-50	30-60	15-32	1.30-1.60	0.6-2.0	0.10-0.16	0.0-2.9	0.0-0.5
	21-65	20-50	30-60	15-32	1.40-1.70	0.1-0.2	0.06-0.10	0.0-2.9	0.0-0.1
543247									
Buchanan, extremely stony	0-3	20-50	30-60	10-27	1.20-1.40	0.6-2.0	0.12-0.18	0.0-2.9	1.0-3.0
	3-21	20-50	30-60	15-32	1.30-1.60	0.6-2.0	0.10-0.16	0.0-2.9	0.0-0.5
	21-65	20-50	30-60	15-32	1.40-1.70	0.1-0.2	0.06-0.10	0.0-2.9	0.0-0.1

# Soil Survey of Delaware Water Gap National Recreation Area

Table 15.--Physical Soil Properties--Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
543257 Chippewa-----	0-8	27	54	10-27	1.00-1.30	0.6-2.0	0.18-0.22	0.0-2.9	3.0-10
	8-16	19	54	18-35	1.20-1.50	0.6-2.0	0.10-0.17	0.0-2.9	0.5-5.0
	16-48	40	38	10-35	1.55-2.05	0.0-0.2	0.01-0.02	0.0-2.9	0.2-1.0
	48-80	40	38	10-35	1.50-1.80	0.0-0.2	0.01-0.02	0.0-2.9	0.2-1.0
543258 Chippewa-----	0-8	27	54	10-27	1.00-1.30	0.6-2.0	0.18-0.22	0.0-2.9	3.0-10
	8-16	19	54	18-35	1.20-1.50	0.6-2.0	0.10-0.17	0.0-2.9	0.5-5.0
	16-48	40	38	10-35	1.55-2.05	0.0-0.2	0.01-0.02	0.0-2.9	0.2-1.0
	48-80	40	38	10-35	1.50-1.80	0.0-0.2	0.01-0.02	0.0-2.9	0.2-1.0
543259 Chippewa, extremely stony	0-8	27	54	10-27	1.10-1.40	0.6-2.0	0.11-0.18	0.0-2.9	3.0-10
	8-16	19	54	18-35	1.20-1.50	0.6-2.0	0.10-0.17	0.0-2.9	0.5-5.0
	16-48	40	38	10-35	1.55-2.05	0.0-0.2	0.01-0.02	0.0-2.9	0.2-1.0
	48-80	40	38	10-35	1.50-1.80	0.0-0.2	0.01-0.02	0.0-2.9	0.2-1.0
543271 Delaware-----	0-10	68	21	2-20	1.15-1.40	2.0-6.0	0.15-0.21	0.0-2.9	2.0-4.0
	10-40	62	34	2-7	1.15-1.45	2.0-6.0	0.07-0.20	0.0-2.9	0.0-0.5
	40-87	79	16	2-7	1.25-1.55	6.0-20.0	0.04-0.10	0.0-2.9	0.0-0.5
543276 Fluvaquents-----	0-6	30	54	5-27	1.00-1.40	0.2-6.0	0.06-0.17	0.0-2.9	1.0-4.0
	6-62	29	30	5-60	1.00-1.50	0.1-0.6	0.03-0.17	0.0-2.9	0.0-3.0
543292 Hazleton, extremely stony	0-6	46	42	7-18	1.20-1.40	2.0-6.0	0.10-0.16	0.0-2.9	2.0-4.0
	6-43	45	43	7-18	1.20-1.40	2.0-20.0	0.08-0.12	0.0-2.9	0.0-0.5
	43-55	46	44	5-15	1.20-1.40	2.0-20.0	0.06-0.12	0.0-2.9	0.0-0.5
	55-80	---	---	---	---	2.0-6.0	---	---	---
543293 Hazleton, extremely stony	0-6	46	42	7-18	1.20-1.40	2.0-6.0	0.10-0.16	0.0-2.9	2.0-4.0
	6-43	45	43	7-18	1.20-1.40	2.0-20.0	0.08-0.12	0.0-2.9	0.0-0.5
	43-60	46	44	5-15	1.20-1.40	2.0-20.0	0.06-0.12	0.0-2.9	0.0-0.5
	60-80	---	---	---	---	2.0-6.0	---	---	---
543299 Laidig, extremely stony	0-3	43	40	7-27	1.20-1.40	0.6-6.0	0.08-0.12	0.0-2.9	2.0-4.0
	3-38	38	36	18-35	1.30-1.50	0.6-6.0	0.08-0.12	0.0-2.9	0.0-0.5
	38-62	42	38	18-35	1.40-1.70	0.1-0.6	0.06-0.10	0.0-2.9	0.0-0.5
543300 Laidig, extremely stony	0-3	43	40	7-27	1.20-1.40	0.6-6.0	0.08-0.12	0.0-2.9	2.0-4.0
	3-38	38	36	18-35	1.30-1.50	0.6-6.0	0.08-0.12	0.0-2.9	0.0-0.5
	38-62	42	38	18-35	1.40-1.70	0.1-0.6	0.06-0.10	0.0-2.9	0.0-0.5
543304 Laidig-----	0-3	43	40	7-27	1.20-1.40	0.6-6.0	0.08-0.12	0.0-2.9	2.0-4.0
	3-38	38	36	18-35	1.30-1.50	0.6-6.0	0.08-0.12	0.0-2.9	0.0-0.5
	38-62	42	38	18-35	1.40-1.70	0.1-0.6	0.06-0.10	0.0-2.9	0.0-0.5
543327 Swartswood-----	0-11	44	40	12-20	1.20-1.40	0.6-2.0	0.08-0.12	0.0-2.9	2.0-4.0
	11-34	45	41	10-20	1.20-1.50	0.6-2.0	0.08-0.12	0.0-2.9	0.0-0.5
	34-47	70	16	8-20	1.40-1.80	0.1-0.6	0.06-0.10	0.0-2.9	0.0-0.5

# Soil Survey of Delaware Water Gap National Recreation Area

Table 15.--Physical Soil Properties--Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
543328									
Swartswood-----	0-11	44	40	12-20	1.20-1.40	0.6-2.0	0.08-0.12	0.0-2.9	2.0-4.0
	11-34	45	41	10-20	1.20-1.50	0.6-2.0	0.08-0.12	0.0-2.9	0.0-0.5
	34-47	70	16	8-20	1.40-1.80	0.1-0.6	0.06-0.10	0.0-2.9	0.0-0.5
543330									
Swartswood, extremely stony	0-11	44	40	12-20	1.20-1.40	0.6-2.0	0.08-0.12	0.0-2.9	5.0-10
	11-34	44	41	10-20	1.20-1.50	0.6-2.0	0.08-0.12	0.0-2.9	0.0-1.0
	34-47	70	16	8-20	1.40-1.80	0.1-0.6	0.06-0.10	0.0-2.9	0.0-0.5
Wurtsboro, extremely stony	0-10	44	41	10-20	1.20-1.40	0.6-2.0	0.10-0.16	0.0-2.9	1.0-3.0
	10-20	46	44	5-20	1.40-1.60	0.6-2.0	0.10-0.14	0.0-2.9	0.0-0.5
	20-64	44	41	10-20	1.60-1.80	0.1-0.2	0.08-0.12	0.0-2.9	0.0-0.5
543331									
Swartswood, extremely stony	0-11	44	40	12-20	1.20-1.40	0.6-2.0	0.08-0.12	0.0-2.9	5.0-10
	11-34	44	41	10-20	1.20-1.50	0.6-2.0	0.08-0.12	0.0-2.9	0.0-1.0
	34-47	70	16	8-20	1.40-1.80	0.1-0.6	0.06-0.10	0.0-2.9	0.0-0.5
Wurtsboro, extremely stony	0-10	44	41	10-20	1.20-1.40	0.6-2.0	0.10-0.16	0.0-2.9	1.0-3.0
	10-20	45	41	10-20	1.40-1.60	0.6-2.0	0.10-0.14	0.0-2.9	0.0-0.5
	20-64	44	41	10-20	1.60-1.80	0.1-0.2	0.08-0.12	0.0-2.9	0.0-0.5
543359									
Volusia-----	0-8	22	55	18-27	1.10-1.40	0.6-2.0	0.09-0.14	0.0-2.9	2.0-8.0
	8-15	40	38	18-27	1.30-1.60	0.6-2.0	0.09-0.16	0.0-2.9	0.0-1.0
	15-70	43	39	15-35	1.60-2.05	0.0-0.2	0.01-0.02	0.0-2.9	0.1-0.5
	70-80	42	37	15-27	1.50-1.80	0.0-0.2	0.01-0.02	0.0-2.9	0.1-0.6
543360									
Volusia, extremely stony	0-8	22	55	18-27	1.10-1.40	0.6-2.0	0.11-0.17	0.0-2.9	2.0-8.0
	8-15	40	38	18-27	1.30-1.60	0.6-2.0	0.09-0.16	0.0-2.9	0.0-1.0
	15-70	43	39	15-35	1.60-2.05	0.0-0.2	0.01-0.02	0.0-2.9	0.1-0.5
	70-80	42	37	15-27	1.50-1.80	0.0-0.2	0.01-0.02	0.0-2.9	0.1-0.6
543374									
Wurtsboro-----	0-10	30	55	10-20	1.20-1.40	0.6-2.0	0.10-0.14	0.0-2.9	1.0-3.0
	10-20	45	41	10-20	1.40-1.60	0.6-2.0	0.10-0.14	0.0-2.9	0.0-0.5
	20-64	44	41	10-20	1.60-1.80	0.1-0.2	0.08-0.12	0.0-2.9	0.0-0.5
543375									
Wurtsboro-----	0-10	30	55	10-20	1.20-1.40	0.6-2.0	0.10-0.14	0.0-2.9	1.0-3.0
	10-20	45	41	10-20	1.40-1.60	0.6-2.0	0.10-0.14	0.0-2.9	0.0-0.5
	20-64	44	41	10-20	1.60-1.80	0.1-0.2	0.08-0.12	0.0-2.9	0.0-0.5
612280									
Scio-----	0-6	16-32	51-65	13-18	1.46-1.59	0.6-2.0	0.18-0.21	0.0-2.9	2.0-8.0
	6-13	16-32	51-65	13-18	1.46-1.59	0.6-2.0	0.18-0.21	0.0-2.9	2.0-8.0
	13-23	16-71	26-65	7-18	1.44-1.59	0.6-2.0	0.17-0.20	0.0-2.9	0.5-2.0
	23-28	16-71	26-65	7-18	1.44-1.59	0.6-2.0	0.17-0.20	0.0-2.9	0.1-1.0
	28-50	16-71	26-65	7-18	1.44-1.59	0.6-2.0	0.17-0.20	0.0-2.9	0.0-0.8
	50-59	16-71	26-65	7-18	1.44-1.59	0.6-2.0	0.10-0.19	0.0-2.9	0.0-0.5
	59-72	16-71	26-65	7-18	1.44-1.59	0.6-2.0	0.10-0.19	0.0-2.9	0.0-0.5
612666									
Colonie-----	0-2	76-79	21-24	0-1	1.24-1.45	2.0-20.0	0.09-0.10	0.0-0.1	1.0-2.0
	2-11	76-95	21-24	0-1	1.24-1.45	2.0-20.0	0.09-0.10	0.0-0.1	1.0-2.0
	11-24	76-98	2-24	0-1	1.29-1.51	2.0-20.0	0.06-0.08	0.0-0.1	0.0-0.5
	24-40	76-98	2-24	0-1	1.29-1.51	2.0-20.0	0.06-0.08	0.0-0.1	0.0-0.5
	40-62	76-98	2-24	0-1	1.29-1.51	2.0-20.0	0.06-0.08	0.0-0.1	0.0-0.5

# Soil Survey of Delaware Water Gap National Recreation Area

Table 15.--Physical Soil Properties--Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
612668									
Hoosic, very stony-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-9	35-47	35-50	10-18	1.30-1.52	2.0-20.0	0.11-0.16	0.0-0.2	1.8-5.2
	9-21	35-76	15-50	5-18	1.45-1.57	2.0-20.0	0.05-0.14	0.0-0.1	0.2-1.0
	21-27	82-98	2-13	0-7	0.67-1.58	20.0-99.9	0.01-0.05	0.0-0.1	0.0-0.5
	27-37	82-98	2-13	0-7	0.67-1.58	20.0-99.9	0.01-0.05	0.0-0.1	0.0-0.5
	37-49	82-98	2-13	0-7	0.67-1.58	20.0-99.9	0.01-0.05	0.0-0.1	0.0-0.5
	49-60	82-98	2-13	0-7	0.67-1.58	20.0-99.9	0.01-0.05	0.0-0.1	0.0-0.5
Hazen, very stony-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-10	35-47	35-50	10-18	1.30-1.52	0.6-5.9	0.12-0.18	0.0-0.2	1.8-5.2
	10-18	61-76	15-26	5-14	1.50-1.57	0.6-5.9	0.10-0.14	0.0-0.1	0.2-1.0
	18-29	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.08	0.0-0.1	0.1-0.5
	29-41	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.08	0.0-0.1	0.0-0.5
	41-60	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.08	0.0-0.1	0.0-0.5
612724									
Lordstown, very rocky-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	35-47	35-50	10-18	1.30-1.52	0.6-2.0	0.11-0.17	0.0-0.2	3.0-8.0
	2-3	53-68	17-44	2-17	1.29-1.42	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	3-5	16-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	5-17	21-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	17-22	21-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	22-36	16-68	17-65	2-18	1.29-1.70	0.6-2.0	0.05-0.14	0.0-0.1	0.0-0.5
	36-80	---	---	---	---	---	---	---	---
Wallpack, very rocky-----	0-1	0-32	0-65	0-17	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	16-32	51-65	13-17	1.34-1.54	0.6-5.9	0.18-0.23	0.0-0.1	1.0-20
	2-5	16-76	15-65	9-17	1.16-1.50	0.6-5.9	0.14-0.20	0.0-0.1	0.5-2.5
	5-18	11-76	15-65	9-17	1.29-1.73	0.6-5.9	0.14-0.18	0.0-0.1	0.0-0.5
	18-24	11-76	15-65	9-20	1.64-1.98	0.0-0.6	0.08-0.16	0.0-1.5	0.0-0.3
	24-42	11-76	15-65	9-20	1.64-1.98	0.0-0.6	0.08-0.14	0.0-1.5	0.0-0.3
	42-60	11-76	15-65	9-20	1.64-1.98	0.0-0.6	0.08-0.14	0.0-1.5	0.0-0.3
612732									
Atherton, very poorly drained-	0-2	0-30	0-55	0-25	0.13-0.23	5.9-20.0	0.45-0.55	0.0-0.0	70-100
	2-4	0-30	0-55	0-25	0.13-0.23	2.0-5.9	0.45-0.55	0.0-0.0	70-100
	4-8	20-30	50-55	21-25	1.34-1.54	0.2-2.0	0.16-0.21	0.0-0.1	10-25
	8-10	5-71	17-59	2-35	1.34-1.54	0.2-2.0	0.10-0.19	0.0-0.1	1.0-8.0
	10-18	5-71	17-59	2-35	1.56-1.73	0.2-2.0	0.10-0.19	0.0-0.1	0.0-2.0
	18-29	5-71	17-59	2-35	1.56-1.73	0.2-2.0	0.10-0.19	0.0-0.1	0.0-2.0
	29-32	5-71	17-59	2-35	1.56-1.73	0.2-2.0	0.10-0.19	0.0-0.1	0.0-2.0
	32-41	5-71	17-59	2-35	1.56-1.73	0.2-2.0	0.10-0.19	0.0-0.1	0.0-2.0
	41-45	5-71	17-59	2-35	1.42-1.70	0.6-5.9	0.05-0.12	0.0-0.1	0.0-1.0
	45-50	5-71	17-59	2-35	1.42-1.70	0.6-5.9	0.05-0.12	0.0-0.1	0.0-1.0
	50-60	5-71	17-59	2-35	1.42-1.70	0.6-5.9	0.05-0.12	0.0-0.1	0.0-1.0
	60-70	5-71	17-59	2-35	1.42-1.70	0.6-5.9	0.05-0.12	0.0-0.1	0.0-1.0
Atherton, poorly drained-	0-6	32-42	39-49	18-22	1.10-1.40	0.2-2.0	0.16-0.21	0.0-0.1	4.0-10
	6-12	5-71	17-59	2-35	1.25-1.55	0.2-2.0	0.10-0.19	0.0-0.1	0.0-2.0
	12-30	5-71	17-59	2-35	1.25-1.55	0.2-2.0	0.10-0.19	0.0-0.1	0.0-2.0
	30-40	5-76	10-59	2-35	1.45-1.65	0.6-5.9	0.05-0.12	0.0-0.1	0.0-1.0
	40-60	5-76	10-59	2-35	1.45-1.65	0.6-5.9	0.05-0.12	0.0-0.1	0.0-1.0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 15.--Physical Soil Properties--Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
612738 Fluvaquents, occasionally flooded-----	0-5	20-50	50-80	12-27	1.20-1.40	0.6-2.0	0.16-0.20	0.0-2.9	2.0-4.0
	5-12	20-50	50-80	12-27	1.30-1.50	0.6-2.0	0.16-0.20	0.0-2.9	0.0-0.5
	12-18	20-80	5-80	7-35	1.20-1.50	0.6-2.0	0.12-0.18	0.0-2.9	0.0-0.5
	18-24	20-80	5-80	7-35	1.20-1.50	0.6-2.0	0.12-0.18	0.0-2.9	0.0-0.5
	24-60	20-85	10-80	7-35	1.20-1.70	2.0-20.0	0.04-0.08	0.0-2.9	0.0-0.5
612753 Wallpack, aeolian mantle, very stony-----	0-1	0-73	0-44	0-17	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	53-73	17-44	2-17	1.24-1.52	0.6-2.0	0.15-0.21	0.0-0.2	2.0-4.5
	2-8	53-73	17-44	2-17	1.24-1.52	0.6-2.0	0.15-0.21	0.0-0.2	0.5-2.0
	8-14	16-68	17-65	2-18	1.29-1.42	0.6-2.0	0.07-0.20	0.0-0.1	0.0-0.5
	14-21	16-68	17-65	2-18	1.29-1.42	0.6-2.0	0.07-0.20	0.0-0.1	0.0-0.5
	21-26	16-68	17-65	2-18	1.29-1.42	0.6-2.0	0.07-0.20	0.0-0.1	0.0-0.5
	26-31	16-68	17-65	2-18	1.29-1.42	0.6-2.0	0.07-0.20	0.0-0.1	0.0-0.5
	31-36	16-68	17-65	2-18	1.29-1.42	0.6-2.0	0.07-0.20	0.0-0.1	0.0-0.5
	36-60	16-68	17-65	2-18	1.29-1.42	0.6-2.0	0.07-0.20	0.0-0.1	0.0-0.5
612756 Wallpack, aeolian mantle, very stony-----	0-1	0-73	0-44	0-17	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	53-73	17-44	2-17	1.24-1.52	0.6-2.0	0.15-0.21	0.0-0.2	2.0-4.5
	2-8	53-73	17-44	2-17	1.24-1.52	0.6-2.0	0.15-0.21	0.0-0.2	0.5-2.0
	8-14	16-68	17-65	2-18	1.29-1.42	0.6-2.0	0.07-0.20	0.0-0.1	0.0-0.5
	14-21	16-68	17-65	2-18	1.29-1.42	0.6-2.0	0.07-0.20	0.0-0.1	0.0-0.5
	21-26	16-68	17-65	2-18	1.29-1.42	0.6-2.0	0.07-0.20	0.0-0.1	0.0-0.5
	26-31	16-68	17-65	2-18	1.29-1.42	0.6-2.0	0.07-0.20	0.0-0.1	0.0-0.5
	31-36	16-68	17-65	2-18	1.29-1.42	0.6-2.0	0.07-0.20	0.0-0.1	0.0-0.5
	36-60	16-68	17-65	2-18	1.29-1.42	0.6-2.0	0.07-0.20	0.0-0.1	0.0-0.5
612757 Wallpack, aeolian mantle, very stony-----	0-1	0-73	0-44	0-17	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	53-73	17-44	2-17	1.24-1.52	0.6-2.0	0.15-0.21	0.0-0.2	2.0-4.5
	2-8	53-73	17-44	2-17	1.24-1.52	0.6-2.0	0.15-0.21	0.0-0.2	0.5-2.0
	8-14	16-68	17-65	2-18	1.29-1.42	0.6-2.0	0.07-0.20	0.0-0.1	0.0-0.5
	14-21	16-68	17-65	2-18	1.29-1.42	0.6-2.0	0.07-0.20	0.0-0.1	0.0-0.5
	21-26	16-68	17-65	2-18	1.29-1.42	0.6-2.0	0.07-0.20	0.0-0.1	0.0-0.5
	26-31	16-68	17-65	2-18	1.29-1.42	0.6-2.0	0.07-0.20	0.0-0.1	0.0-0.5
	31-36	16-68	17-65	2-18	1.29-1.42	0.6-2.0	0.07-0.20	0.0-0.1	0.0-0.5
	36-60	16-68	17-65	2-18	1.29-1.42	0.6-2.0	0.07-0.20	0.0-0.1	0.0-0.5
612767 Wellsboro, extremely stony	0-8	16-47	51-65	13-18	1.34-1.54	0.6-2.0	0.35-0.45	0.0-0.1	3.0-5.0
	8-15	16-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.2-2.5
	15-24	16-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.0-0.5
	24-29	16-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.0-0.5
	29-37	16-76	15-65	9-18	1.64-1.98	0.1-0.2	0.06-0.12	0.0-0.1	0.0-0.5
	37-60	16-76	15-65	9-18	1.64-1.98	0.1-0.2	0.06-0.12	0.0-0.1	0.0-0.5

# Soil Survey of Delaware Water Gap National Recreation Area

Table 15.--Physical Soil Properties--Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
612768 Wellsboro, extremely stony	0-8	16-47	51-65	13-18	1.34-1.54	0.6-2.0	0.35-0.45	0.0-0.1	3.0-5.0
	8-15	16-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.2-2.5
	15-24	16-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.0-0.5
	24-29	16-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.0-0.5
	29-37	16-76	15-65	9-18	1.64-1.98	0.1-0.2	0.06-0.12	0.0-0.1	0.0-0.5
	37-60	16-76	15-65	9-18	1.64-1.98	0.1-0.2	0.06-0.12	0.0-0.1	0.0-0.5
613393 Alden, extremely stony-----	0-2	0-30	0-55	0-22	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	2-7	23-30	50-55	18-22	1.34-1.54	0.6-2.0	0.16-0.22	0.0-0.1	4.0-10
	7-14	5-71	26-59	2-35	1.29-1.62	0.2-0.6	0.14-0.20	0.0-0.1	0.5-1.0
	14-28	5-71	26-59	2-35	1.29-1.62	0.2-0.6	0.14-0.20	0.0-0.1	0.5-1.0
	28-43	5-71	26-59	2-35	1.29-1.62	0.2-0.6	0.14-0.20	0.0-0.1	0.0-0.5
	43-60	5-68	17-59	8-35	1.29-1.62	0.1-0.6	0.08-0.15	0.0-0.1	0.0-0.5
613447 Unadilla-----	0-8	16-32	51-65	13-18	1.46-1.59	0.6-2.0	0.18-0.21	0.0-0.2	2.0-7.0
	8-14	16-71	26-65	2-18	1.46-1.59	0.6-2.0	0.18-0.21	0.0-0.2	0.5-4.0
	14-25	16-71	26-65	2-18	1.44-1.59	0.6-2.0	0.17-0.20	0.0-0.2	0.0-1.0
	25-39	16-71	26-65	2-18	1.44-1.59	0.6-2.0	0.17-0.20	0.0-0.2	0.0-1.0
	39-60	16-79	21-65	0-18	1.44-1.59	2.0-20.0	0.01-0.15	0.0-0.2	0.0-0.5
613448 Unadilla-----	0-8	16-32	51-65	13-18	1.46-1.59	0.6-2.0	0.18-0.21	0.0-0.2	2.0-7.0
	8-14	16-71	26-65	2-18	1.46-1.59	0.6-2.0	0.18-0.21	0.0-0.2	0.5-4.0
	14-25	16-71	26-65	2-18	1.44-1.59	0.6-2.0	0.17-0.20	0.0-0.2	0.0-1.0
	25-39	16-71	26-65	2-18	1.44-1.59	0.6-2.0	0.17-0.20	0.0-0.2	0.0-1.0
	39-60	16-79	21-65	0-18	1.44-1.59	2.0-20.0	0.01-0.15	0.0-0.2	0.0-0.5
614075 Wurtsboro, extremely stony	0-2	0-68	0-44	0-17	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	2-3	53-68	17-44	2-17	1.24-1.68	0.6-5.9	0.10-0.16	0.0-0.2	1.8-5.2
	3-4	35-68	17-50	2-18	1.29-1.42	0.6-5.9	0.10-0.16	0.0-0.1	0.0-1.0
	4-6	35-68	17-50	2-18	1.29-1.42	0.6-5.9	0.10-0.16	0.0-0.1	0.5-2.0
	6-18	35-76	15-50	2-18	1.29-1.70	0.6-5.9	0.10-0.14	0.0-0.1	0.0-1.0
	18-24	35-76	15-50	2-18	1.29-1.70	0.6-5.9	0.10-0.14	0.0-0.1	0.0-1.0
	24-33	35-76	15-50	2-18	1.64-1.98	0.1-0.2	0.08-0.12	0.0-0.1	0.0-0.5
	33-60	35-76	15-50	2-18	1.64-1.98	0.1-0.2	0.08-0.12	0.0-0.1	0.0-0.5
Swartswood, extremely stony	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	35-47	35-50	10-18	1.29-1.52	0.6-5.9	0.08-0.12	0.0-0.2	1.8-5.2
	2-3	53-76	15-44	2-17	1.29-1.51	0.6-5.9	0.08-0.12	0.0-0.1	0.0-1.0
	3-4	53-76	15-44	2-17	1.29-1.51	0.6-5.9	0.08-0.12	0.0-0.1	0.5-2.0
	4-21	35-76	15-50	2-18	1.29-1.70	0.6-5.9	0.08-0.12	0.0-0.1	0.0-1.0
	21-32	35-76	15-50	8-18	1.64-1.98	0.1-0.6	0.06-0.10	0.0-0.1	0.0-0.5
	32-60	35-76	15-50	8-18	1.64-1.98	0.1-0.6	0.06-0.10	0.0-0.1	0.0-0.5
620179 Arnot, very rocky-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	35-47	35-50	10-18	1.30-1.42	0.6-5.9	0.10-0.15	0.0-0.2	3.0-6.0
	2-3	53-68	17-44	2-17	1.29-1.42	0.6-5.9	0.08-0.12	0.0-0.1	0.0-0.5
	3-4	53-68	17-44	2-17	1.29-1.59	0.6-5.9	0.08-0.12	0.0-0.1	0.0-0.5
	4-12	16-47	35-65	10-18	1.29-1.59	0.6-5.9	0.08-0.12	0.0-0.1	0.0-0.5
	12-17	16-47	35-65	10-18	1.29-1.59	0.6-5.9	0.08-0.12	0.0-0.1	0.0-0.5
	17-80	---	---	---	---	---	---	---	---

# Soil Survey of Delaware Water Gap National Recreation Area

Table 15.--Physical Soil Properties--Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
620179 Lordstown, very rocky-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	35-47	35-50	10-18	1.30-1.52	0.6-2.0	0.11-0.17	0.0-0.2	3.0-8.0
	2-3	53-68	17-44	2-17	1.29-1.42	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	3-5	16-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	5-17	21-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	17-22	21-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	22-36	16-68	17-65	2-18	1.29-1.70	0.6-2.0	0.05-0.14	0.0-0.1	0.0-0.5
	36-80	---	---	---	---	---	---	---	---
620180 Arnot-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	35-47	35-50	10-18	1.30-1.42	0.6-5.9	0.10-0.15	0.0-0.2	3.0-6.0
	2-3	53-68	17-44	2-17	1.29-1.42	0.6-5.9	0.08-0.12	0.0-0.1	0.0-0.5
	3-4	53-68	17-44	2-17	1.29-1.59	0.6-5.9	0.08-0.12	0.0-0.1	0.0-0.5
	4-12	16-47	35-65	10-18	1.29-1.59	0.6-5.9	0.08-0.12	0.0-0.1	0.0-0.5
	12-17	16-47	35-65	10-18	1.29-1.59	0.6-5.9	0.08-0.12	0.0-0.1	0.0-0.5
	17-80	---	---	---	---	---	---	---	---
Lordstown-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	35-47	35-50	10-18	1.30-1.52	0.6-2.0	0.11-0.17	0.0-0.2	3.0-8.0
	2-3	53-68	17-44	2-17	1.29-1.42	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	3-5	16-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	5-17	21-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	17-22	21-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	22-36	16-68	17-65	2-18	1.29-1.70	0.6-2.0	0.05-0.14	0.0-0.1	0.0-0.5
	36-80	---	---	---	---	---	---	---	---
620181 Arnot-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	35-47	35-50	10-18	1.30-1.42	0.6-5.9	0.10-0.15	0.0-0.2	3.0-6.0
	2-3	53-68	17-44	2-17	1.29-1.42	0.6-5.9	0.08-0.12	0.0-0.1	0.0-0.5
	3-4	53-68	17-44	2-17	1.29-1.59	0.6-5.9	0.08-0.12	0.0-0.1	0.0-0.5
	4-12	16-47	35-65	10-18	1.29-1.59	0.6-5.9	0.08-0.12	0.0-0.1	0.0-0.5
	12-17	16-47	35-65	10-18	1.29-1.59	0.6-5.9	0.08-0.12	0.0-0.1	0.0-0.5
	17-80	---	---	---	---	---	---	---	---
Lordstown-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	35-47	35-50	10-18	1.30-1.52	0.6-2.0	0.11-0.17	0.0-0.2	3.0-8.0
	2-3	53-68	17-44	2-17	1.29-1.42	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	3-5	16-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	5-17	21-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	17-22	21-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	22-36	16-68	17-65	2-18	1.29-1.70	0.6-2.0	0.05-0.14	0.0-0.1	0.0-0.5
	36-80	---	---	---	---	---	---	---	---
623089 Chippewa, extremely stony	0-2	0-30	0-55	0-22	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	2-4	23-30	50-55	18-22	1.03-1.54	0.6-2.0	0.18-0.22	0.0-0.2	2.0-4.0
	4-8	5-42	39-59	18-35	1.16-1.50	0.6-2.0	0.10-0.17	0.0-0.1	0.3-0.5
	8-13	5-42	39-59	18-35	1.16-1.62	0.6-2.0	0.10-0.17	0.0-0.1	0.3-0.5
	13-21	5-68	17-59	8-35	1.71-1.98	0.0-0.2	0.01-0.02	0.0-0.1	0.2-0.4
	21-29	5-68	17-59	8-35	1.71-1.98	0.0-0.2	0.01-0.02	0.0-0.1	0.2-0.4
	29-34	5-68	17-59	8-35	1.42-1.98	0.0-0.2	0.01-0.02	0.0-0.1	0.1-0.3
	34-60	5-68	17-59	8-35	1.42-1.98	0.0-0.2	0.01-0.02	0.0-0.1	0.1-0.3



# Soil Survey of Delaware Water Gap National Recreation Area

Table 15.--Physical Soil Properties--Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
623109									
Farmington-----	0-1	0-32	0-65	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-3	16-32	51-65	13-18	1.34-1.54	0.6-5.9	0.12-0.22	0.0-0.1	2.0-5.0
	3-9	16-71	17-65	2-18	1.29-1.58	0.6-5.9	0.08-0.20	0.0-0.1	0.5-1.5
	9-15	16-71	17-65	2-18	1.29-1.58	0.6-5.9	0.05-0.15	0.0-0.1	0.0-1.0
	15-80	---	---	---	---	---	---	---	---
624811									
Galway, very rocky-----	0-2	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	2-3	0-47	0-50	0-18	0.13-0.23	2.0-5.9	0.35-0.45	0.0-0.0	70-100
	3-5	35-47	35-50	10-18	1.12-1.30	0.6-2.0	0.15-0.21	0.0-0.1	2.0-6.0
	5-15	16-68	17-65	2-18	1.29-1.58	0.6-2.0	0.08-0.19	0.0-0.1	0.0-1.0
	15-24	16-68	17-65	2-18	1.29-1.58	0.6-2.0	0.04-0.14	0.0-0.1	0.0-1.0
	24-80	---	---	---	---	---	---	---	---
624813									
Lackawanna, extremely stony	0-2	0-68	0-44	0-17	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	2-3	53-68	17-44	2-17	1.30-1.52	0.6-2.0	0.10-0.16	0.0-0.1	3.0-6.0
	3-7	53-68	17-44	2-17	1.29-1.42	0.6-2.0	0.10-0.16	0.0-0.1	0.0-2.0
	7-8	53-68	17-44	2-17	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	2.0-6.0
	8-16	16-68	17-65	2-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.0-2.0
	16-24	16-68	17-65	2-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.0-2.0
	24-29	16-76	15-65	2-18	1.64-1.98	0.1-0.2	0.06-0.12	0.0-0.1	0.0-0.5
	29-60	16-76	15-65	2-18	1.64-1.98	0.1-0.2	0.06-0.12	0.0-0.1	0.0-0.5
624816									
Lordstown, very rocky-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	35-47	35-50	10-18	1.30-1.52	0.6-2.0	0.11-0.17	0.0-0.2	3.0-8.0
	2-3	53-68	17-44	2-17	1.29-1.42	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	3-5	16-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	5-17	21-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	17-22	21-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	22-36	16-68	17-65	2-18	1.29-1.70	0.6-2.0	0.05-0.14	0.0-0.1	0.0-0.5
	36-80	---	---	---	---	---	---	---	---
Wallpack, very rocky-----	0-1	0-32	0-65	0-17	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	16-32	51-65	13-17	1.34-1.54	0.6-5.9	0.18-0.23	0.0-0.1	1.0-20
	2-5	16-76	15-65	9-17	1.16-1.50	0.6-5.9	0.14-0.20	0.0-0.1	0.5-2.5
	5-18	11-76	15-65	9-17	1.29-1.73	0.6-5.9	0.14-0.18	0.0-0.1	0.0-0.5
	18-24	11-76	15-65	9-20	1.64-1.98	0.0-0.6	0.08-0.16	0.0-1.5	0.0-0.3
	24-42	11-76	15-65	9-20	1.64-1.98	0.0-0.6	0.08-0.14	0.0-1.5	0.0-0.3
	42-60	11-76	15-65	9-20	1.64-1.98	0.0-0.6	0.08-0.14	0.0-1.5	0.0-0.3
624822									
Lordstown-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	35-47	35-50	10-18	1.30-1.52	0.6-2.0	0.11-0.17	0.0-0.2	3.0-8.0
	2-3	53-68	17-44	2-17	1.29-1.42	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	3-5	16-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	5-17	21-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	17-22	21-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	22-36	16-68	17-65	2-18	1.29-1.70	0.6-2.0	0.05-0.14	0.0-0.1	0.0-0.5
	36-80	---	---	---	---	---	---	---	---
Wallpack-----	0-3	16-32	51-65	13-17	1.34-1.54	0.6-5.9	0.16-0.20	0.0-0.1	1.3-3.3
	3-9	16-32	51-65	13-17	1.34-1.54	0.6-5.9	0.12-0.20	0.0-0.1	0.8-2.3
	9-16	11-76	15-65	2-17	1.29-1.73	0.6-5.9	0.12-0.16	0.0-0.1	0.0-0.5
	16-25	11-76	15-65	2-20	1.71-1.98	0.0-0.6	0.07-0.12	0.0-0.1	0.0-0.3
	25-65	11-76	15-65	2-20	1.71-1.98	0.0-0.6	0.07-0.14	0.0-0.1	0.0-0.2

# Soil Survey of Delaware Water Gap National Recreation Area

Table 15.--Physical Soil Properties--Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
624823									
Lordstown-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	35-47	35-50	10-18	1.30-1.52	0.6-2.0	0.11-0.17	0.0-0.2	3.0-8.0
	2-3	53-68	17-44	2-17	1.29-1.42	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	3-5	16-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	5-17	21-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	17-22	21-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	22-36	16-68	17-65	2-18	1.29-1.70	0.6-2.0	0.05-0.14	0.0-0.1	0.0-0.5
	36-80	---	---	---	---	---	---	---	---
Wallpack-----	0-3	16-32	51-65	13-17	1.34-1.54	0.6-5.9	0.16-0.20	0.0-0.1	1.3-3.3
	3-9	16-32	51-65	13-17	1.34-1.54	0.6-5.9	0.12-0.20	0.0-0.1	0.8-2.3
	9-16	11-76	15-65	2-17	1.29-1.73	0.6-5.9	0.12-0.16	0.0-0.1	0.0-0.5
	16-25	11-76	15-65	2-20	1.71-1.98	0.0-0.6	0.07-0.12	0.0-0.1	0.0-0.3
	25-65	11-76	15-65	2-20	1.71-1.98	0.0-0.6	0.07-0.14	0.0-0.1	0.0-0.2
624824									
Lordstown-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	35-47	35-50	10-18	1.30-1.52	0.6-2.0	0.11-0.17	0.0-0.2	3.0-8.0
	2-3	53-68	17-44	2-17	1.29-1.42	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	3-5	16-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	5-17	21-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	17-22	21-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	22-36	16-68	17-65	2-18	1.29-1.70	0.6-2.0	0.05-0.14	0.0-0.1	0.0-0.5
	36-80	---	---	---	---	---	---	---	---
Wallpack-----	0-3	16-32	51-65	13-17	1.34-1.54	0.6-5.9	0.16-0.20	0.0-0.1	1.3-3.3
	3-9	16-32	51-65	13-17	1.34-1.54	0.6-5.9	0.12-0.20	0.0-0.1	0.8-2.3
	9-16	11-76	15-65	2-17	1.29-1.73	0.6-5.9	0.12-0.16	0.0-0.1	0.0-0.5
	16-25	11-76	15-65	2-20	1.71-1.98	0.0-0.6	0.07-0.12	0.0-0.1	0.0-0.3
	25-65	11-76	15-65	2-20	1.71-1.98	0.0-0.6	0.07-0.14	0.0-0.1	0.0-0.2
624826									
Manlius, very rocky-----	0-1	0-32	0-65	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	16-32	51-65	13-18	1.34-1.54	0.6-5.9	0.10-0.18	0.0-0.1	2.0-8.0
	2-18	16-47	35-65	10-18	1.29-1.55	0.6-5.9	0.08-0.12	0.0-0.1	0.0-1.0
	18-27	16-47	35-65	10-18	1.42-1.70	0.6-5.9	0.03-0.09	0.0-0.1	0.0-0.0
	27-80	---	---	---	---	---	---	---	---
Nassau, very rocky-----	0-1	0-32	0-65	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	16-32	51-65	13-18	1.34-1.54	0.6-5.9	0.13-0.17	0.0-0.1	3.0-5.0
	2-15	16-47	35-65	10-18	1.29-1.55	0.6-5.9	0.07-0.12	0.0-0.1	0.0-1.0
	15-80	---	---	---	---	---	---	---	---
624827									
Nassau, very rocky-----	0-7	16-32	51-65	13-18	1.34-1.54	0.6-5.9	0.13-0.17	0.0-0.1	3.0-5.0
	7-13	16-47	35-65	10-18	1.29-1.55	0.6-5.9	0.07-0.12	0.0-0.1	0.0-1.0
	13-80	---	---	---	---	---	---	---	---
Manlius, very rocky-----	0-9	16-32	51-65	13-18	1.34-1.54	0.6-5.9	0.10-0.18	0.0-0.1	2.0-8.0
	9-20	16-47	35-65	10-18	1.29-1.55	0.6-5.9	0.08-0.12	0.0-0.1	0.0-1.0
	20-29	16-47	35-65	10-18	1.42-1.70	0.6-5.9	0.03-0.09	0.0-0.1	0.0-0.0
	29-80	---	---	---	---	---	---	---	---
624828									
Nassau, very rocky-----	0-7	16-32	51-65	13-18	1.34-1.54	0.6-5.9	0.13-0.17	0.0-0.1	3.0-5.0
	7-13	16-47	35-65	10-18	1.29-1.55	0.6-5.9	0.07-0.12	0.0-0.1	0.0-1.0
	13-80	---	---	---	---	---	---	---	---

# Soil Survey of Delaware Water Gap National Recreation Area

Table 15.--Physical Soil Properties--Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
624828 Manlius, very rocky-----	0-9	16-32	51-65	13-18	1.34-1.54	0.6-5.9	0.10-0.18	0.0-0.1	2.0-8.0
	9-20	16-47	35-65	10-18	1.29-1.55	0.6-5.9	0.08-0.12	0.0-0.1	0.0-1.0
	20-29	16-47	35-65	10-18	1.42-1.70	0.6-5.9	0.03-0.09	0.0-0.1	0.0-0.0
	29-80	---	---	---	---	---	---	---	---
624829 Nassau, very rocky-----	0-7	16-32	51-65	13-18	1.34-1.54	0.6-5.9	0.13-0.17	0.0-0.1	3.0-5.0
	7-13	16-47	35-65	10-18	1.29-1.55	0.6-5.9	0.07-0.12	0.0-0.1	0.0-1.0
	13-80	---	---	---	---	---	---	---	---
Manlius, very rocky-----	0-9	16-32	51-65	13-18	1.34-1.54	0.6-5.9	0.10-0.18	0.0-0.1	2.0-8.0
	9-20	16-47	35-65	10-18	1.29-1.55	0.6-5.9	0.08-0.12	0.0-0.1	0.0-1.0
	20-29	16-47	35-65	10-18	1.42-1.70	0.6-5.9	0.03-0.09	0.0-0.1	0.0-0.0
	29-80	---	---	---	---	---	---	---	---
624832 Nassau-----	0-1	0-32	0-65	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	16-32	51-65	13-18	1.34-1.54	0.6-5.9	0.13-0.17	0.0-0.1	3.0-5.0
	2-15	16-47	35-65	10-18	1.29-1.55	0.6-5.9	0.07-0.12	0.0-0.1	0.0-1.0
	15-80	---	---	---	---	---	---	---	---
624841 Oquaga-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-4	35-47	35-50	10-18	1.30-1.52	0.6-2.0	0.08-0.17	0.0-0.1	2.0-8.0
	4-20	16-68	17-65	2-18	1.29-1.59	0.6-2.0	0.04-0.12	0.0-0.1	0.0-2.0
	20-25	16-76	15-65	2-18	1.29-1.70	0.6-2.0	0.04-0.12	0.0-0.1	0.0-1.0
	25-80	---	---	---	---	---	---	---	---
624845 Farmington-----	0-1	0-32	0-65	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-3	16-32	51-65	13-18	1.34-1.54	0.6-5.9	0.12-0.22	0.0-0.1	2.0-5.0
	3-9	16-71	17-65	2-18	1.29-1.58	0.6-5.9	0.08-0.20	0.0-0.1	0.5-1.5
	9-15	16-71	17-65	2-18	1.29-1.58	0.6-5.9	0.05-0.15	0.0-0.1	0.0-1.0
	15-80	---	---	---	---	---	---	---	---
Galway-----	0-2	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	2-3	0-47	0-50	0-18	0.13-0.23	2.0-5.9	0.35-0.45	0.0-0.0	70-100
	3-5	35-47	35-50	10-18	1.12-1.30	0.6-2.0	0.15-0.21	0.0-0.1	2.0-6.0
	5-15	16-68	17-65	2-18	1.29-1.58	0.6-2.0	0.08-0.19	0.0-0.1	0.0-1.0
	15-24	16-68	17-65	2-18	1.29-1.58	0.6-2.0	0.04-0.14	0.0-0.1	0.0-1.0
	24-80	---	---	---	---	---	---	---	---
624846 Arnot-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	35-47	35-50	10-18	1.30-1.42	0.6-5.9	0.10-0.15	0.0-0.2	3.0-6.0
	2-3	53-68	17-44	2-17	1.29-1.42	0.6-5.9	0.08-0.12	0.0-0.1	0.0-0.5
	3-4	53-68	17-44	2-17	1.29-1.59	0.6-5.9	0.08-0.12	0.0-0.1	0.0-0.5
	4-12	16-47	35-65	10-18	1.29-1.59	0.6-5.9	0.08-0.12	0.0-0.1	0.0-0.5
	12-17	16-47	35-65	10-18	1.29-1.59	0.6-5.9	0.08-0.12	0.0-0.1	0.0-0.5
	17-80	---	---	---	---	---	---	---	---

# Soil Survey of Delaware Water Gap National Recreation Area

Table 15.--Physical Soil Properties--Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
626816 Udifluvents, occasionally flooded-----	0-3	43-85	5-45	2-12	1.30-1.50	5.9-20.0	0.11-0.17	0.0-2.9	3.0-5.0
	3-16	43-85	5-45	2-12	1.25-1.55	5.9-20.0	0.02-0.08	0.0-2.9	0.0-3.0
	16-22	65-90	2-25	2-18	1.25-1.55	2.0-5.9	0.02-0.08	0.0-2.9	0.0-3.0
	22-27	65-90	2-25	2-18	1.25-1.55	2.0-5.9	0.02-0.08	0.0-2.9	0.0-3.0
	27-32	65-90	2-25	2-18	1.25-1.55	2.0-5.9	0.02-0.08	0.0-2.9	0.0-3.0
	32-60	43-85	5-45	2-12	1.25-1.55	5.9-20.0	0.02-0.08	0.0-2.9	0.0-3.0
635458 Oquaga, very rocky-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-4	35-47	35-50	10-18	1.30-1.52	0.6-2.0	0.08-0.17	0.0-0.1	2.0-8.0
	4-20	16-68	17-65	2-18	1.29-1.59	0.6-2.0	0.04-0.12	0.0-0.1	0.0-2.0
	20-25	16-76	15-65	2-18	1.29-1.70	0.6-2.0	0.04-0.12	0.0-0.1	0.0-1.0
	25-80	---	---	---	---	---	---	---	---
Lackawanna, very rocky-----	0-2	0-68	0-44	0-17	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	2-3	53-68	17-44	2-17	1.30-1.52	0.6-2.0	0.10-0.16	0.0-0.1	3.0-6.0
	3-7	53-68	17-44	2-17	1.29-1.42	0.6-2.0	0.10-0.16	0.0-0.1	0.0-2.0
	7-8	53-68	17-44	2-17	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	2.0-6.0
	8-16	16-68	17-65	2-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.0-2.0
	16-24	16-68	17-65	2-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.0-2.0
	24-29	16-76	15-65	2-18	1.64-1.98	0.1-0.2	0.06-0.12	0.0-0.1	0.0-0.5
	29-60	16-76	15-65	2-18	1.64-1.98	0.1-0.2	0.06-0.12	0.0-0.1	0.0-0.5
635459 Oquaga, very rocky-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-4	35-47	35-50	10-18	1.30-1.52	0.6-2.0	0.08-0.17	0.0-0.1	2.0-8.0
	4-20	16-68	17-65	2-18	1.29-1.59	0.6-2.0	0.04-0.12	0.0-0.1	0.0-2.0
	20-25	16-76	15-65	2-18	1.29-1.70	0.6-2.0	0.04-0.12	0.0-0.1	0.0-1.0
	25-80	---	---	---	---	---	---	---	---
Lackawanna, very rocky-----	0-2	0-68	0-44	0-17	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	2-3	53-68	17-44	2-17	1.30-1.52	0.6-2.0	0.10-0.16	0.0-0.1	3.0-6.0
	3-7	53-68	17-44	2-17	1.29-1.42	0.6-2.0	0.10-0.16	0.0-0.1	0.0-2.0
	7-8	53-68	17-44	2-17	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	2.0-6.0
	8-16	16-68	17-65	2-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.0-2.0
	16-24	16-68	17-65	2-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.0-2.0
	24-29	16-76	15-65	2-18	1.64-1.98	0.1-0.2	0.06-0.12	0.0-0.1	0.0-0.5
	29-60	16-76	15-65	2-18	1.64-1.98	0.1-0.2	0.06-0.12	0.0-0.1	0.0-0.5
740953 Delaware, rarely flooded-	0-1	0-73	0-44	0-17	0.13-0.23	2.0-5.9	0.35-0.45	0.0-0.0	70-100
	1-4	53-73	17-44	2-17	1.24-1.52	2.0-5.9	0.15-0.21	0.0-0.2	2.0-4.5
	4-11	53-73	17-44	2-17	1.24-1.52	2.0-5.9	0.15-0.21	0.0-0.2	0.5-2.0
	11-20	53-68	17-44	2-17	1.29-1.42	2.0-5.9	0.07-0.20	0.0-0.1	0.0-0.5
	20-33	53-68	17-44	2-17	1.29-1.42	2.0-5.9	0.07-0.20	0.0-0.1	0.0-0.5
	33-41	53-68	17-44	2-17	1.29-1.42	2.0-5.9	0.07-0.20	0.0-0.1	0.0-0.5
	41-56	35-85	12-49	2-17	1.29-1.42	5.9-20.0	0.07-0.20	0.0-0.1	0.0-0.5
	56-60	35-85	12-49	2-17	1.29-1.42	5.9-20.0	0.05-0.15	0.0-0.1	0.0-0.5
740968 Nassau, very rocky-----	0-7	16-32	51-65	13-18	1.34-1.54	0.6-5.9	0.13-0.17	0.0-0.1	3.0-5.0
	7-13	16-47	35-65	10-18	1.29-1.55	0.6-5.9	0.07-0.12	0.0-0.1	0.0-1.0
	13-80	---	---	---	---	---	---	---	---

# Soil Survey of Delaware Water Gap National Recreation Area

Table 15.--Physical Soil Properties--Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
740968 Manlius, very rocky-----	0-9	16-32	51-65	13-18	1.34-1.54	0.6-5.9	0.10-0.18	0.0-0.1	2.0-8.0
	9-20	16-47	35-65	10-18	1.29-1.55	0.6-5.9	0.08-0.12	0.0-0.1	0.0-1.0
	20-29	16-47	35-65	10-18	1.42-1.70	0.6-5.9	0.03-0.09	0.0-0.1	0.0-0.0
	29-80	---	---	---	---	---	---	---	---
740969 Nassau, very rocky-----	0-7	16-32	51-65	13-18	1.34-1.54	0.6-5.9	0.13-0.17	0.0-0.1	3.0-5.0
	7-13	16-47	35-65	10-18	1.29-1.55	0.6-5.9	0.07-0.12	0.0-0.1	0.0-1.0
	13-80	---	---	---	---	---	---	---	---
Manlius, very rocky-----	0-9	16-32	51-65	13-18	1.34-1.54	0.6-5.9	0.10-0.18	0.0-0.1	2.0-8.0
	9-20	16-47	35-65	10-18	1.29-1.55	0.6-5.9	0.08-0.12	0.0-0.1	0.0-1.0
	20-29	16-47	35-65	10-18	1.42-1.70	0.6-5.9	0.03-0.09	0.0-0.1	0.0-0.0
	29-80	---	---	---	---	---	---	---	---
740971 Oquaga, very rocky-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-4	35-47	35-50	10-18	1.30-1.52	0.6-2.0	0.08-0.17	0.0-0.1	2.0-8.0
	4-20	16-68	17-65	2-18	1.29-1.59	0.6-2.0	0.04-0.12	0.0-0.1	0.0-2.0
	20-25	16-76	15-65	2-18	1.29-1.70	0.6-2.0	0.04-0.12	0.0-0.1	0.0-1.0
	25-80	---	---	---	---	---	---	---	---
Lackawanna, very rocky-----	0-2	0-68	0-44	0-17	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	2-3	53-68	17-44	2-17	1.30-1.52	0.6-2.0	0.10-0.16	0.0-0.1	3.0-6.0
	3-7	53-68	17-44	2-17	1.29-1.42	0.6-2.0	0.10-0.16	0.0-0.1	0.0-2.0
	7-8	53-68	17-44	2-17	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	2.0-6.0
	8-16	16-68	17-65	2-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.0-2.0
	16-24	16-68	17-65	2-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.0-2.0
	24-29	16-76	15-65	2-18	1.64-1.98	0.1-0.2	0.06-0.12	0.0-0.1	0.0-0.5
	29-60	16-76	15-65	2-18	1.64-1.98	0.1-0.2	0.06-0.12	0.0-0.1	0.0-0.5
740972 Oquaga, very rocky-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-4	35-47	35-50	10-18	1.30-1.52	0.6-2.0	0.08-0.17	0.0-0.1	2.0-8.0
	4-20	16-68	17-65	2-18	1.29-1.59	0.6-2.0	0.04-0.12	0.0-0.1	0.0-2.0
	20-25	16-76	15-65	2-18	1.29-1.70	0.6-2.0	0.04-0.12	0.0-0.1	0.0-1.0
	25-80	---	---	---	---	---	---	---	---
Lackawanna, very rocky-----	0-2	0-68	0-44	0-17	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	2-3	53-68	17-44	2-17	1.30-1.52	0.6-2.0	0.10-0.16	0.0-0.1	3.0-6.0
	3-7	53-68	17-44	2-17	1.29-1.42	0.6-2.0	0.10-0.16	0.0-0.1	0.0-2.0
	7-8	53-68	17-44	2-17	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	2.0-6.0
	8-16	16-68	17-65	2-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.0-2.0
	16-24	16-68	17-65	2-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.0-2.0
	24-29	16-76	15-65	2-18	1.64-1.98	0.1-0.2	0.06-0.12	0.0-0.1	0.0-0.5
	29-60	16-76	15-65	2-18	1.64-1.98	0.1-0.2	0.06-0.12	0.0-0.1	0.0-0.5
740974 Oquaga-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-4	35-47	35-50	10-18	1.30-1.52	0.6-2.0	0.08-0.17	0.0-0.1	2.0-8.0
	4-20	16-68	17-65	2-18	1.29-1.59	0.6-2.0	0.04-0.12	0.0-0.1	0.0-2.0
	20-25	16-76	15-65	2-18	1.29-1.70	0.6-2.0	0.04-0.12	0.0-0.1	0.0-1.0
	25-80	---	---	---	---	---	---	---	---

# Soil Survey of Delaware Water Gap National Recreation Area

Table 15.--Physical Soil Properties--Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
740975									
Arnot-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	35-47	35-50	10-18	1.30-1.42	0.6-5.9	0.10-0.15	0.0-0.2	3.0-6.0
	2-3	53-68	17-44	2-17	1.29-1.42	0.6-5.9	0.08-0.12	0.0-0.1	0.0-0.5
	3-4	53-68	17-44	2-17	1.29-1.59	0.6-5.9	0.08-0.12	0.0-0.1	0.0-0.5
	4-12	16-47	35-65	10-18	1.29-1.59	0.6-5.9	0.08-0.12	0.0-0.1	0.0-0.5
	12-17	16-47	35-65	10-18	1.29-1.59	0.6-5.9	0.08-0.12	0.0-0.1	0.0-0.5
	17-80	---	---	---	---	---	---	---	---
740987									
Scio-----	0-6	16-32	51-65	13-18	1.46-1.59	0.6-2.0	0.18-0.21	0.0-2.9	2.0-8.0
	6-13	16-32	51-65	13-18	1.46-1.59	0.6-2.0	0.18-0.21	0.0-2.9	2.0-8.0
	13-23	16-71	26-65	7-18	1.44-1.59	0.6-2.0	0.17-0.20	0.0-2.9	0.5-2.0
	23-28	16-71	26-65	7-18	1.44-1.59	0.6-2.0	0.17-0.20	0.0-2.9	0.1-1.0
	28-50	16-71	26-65	7-18	1.44-1.59	0.6-2.0	0.17-0.20	0.0-2.9	0.0-0.8
	50-59	16-71	26-65	7-18	1.44-1.59	0.6-2.0	0.10-0.19	0.0-2.9	0.0-0.5
	59-72	16-71	26-65	7-18	1.44-1.59	0.6-2.0	0.10-0.19	0.0-2.9	0.0-0.5
740988									
Udifluvents, occasionally flooded-----	0-3	43-85	5-45	2-12	1.30-1.50	5.9-20.0	0.11-0.17	0.0-2.9	3.0-5.0
	3-16	43-85	5-45	2-12	1.25-1.55	5.9-20.0	0.02-0.08	0.0-2.9	0.0-3.0
	16-22	65-90	2-25	2-18	1.25-1.55	2.0-5.9	0.02-0.08	0.0-2.9	0.0-3.0
	22-27	65-90	2-25	2-18	1.25-1.55	2.0-5.9	0.02-0.08	0.0-2.9	0.0-3.0
	27-32	65-90	2-25	2-18	1.25-1.55	2.0-5.9	0.02-0.08	0.0-2.9	0.0-3.0
	32-60	43-85	5-45	2-12	1.25-1.55	5.9-20.0	0.02-0.08	0.0-2.9	0.0-3.0
740991									
Unadilla-----	0-8	16-32	51-65	13-18	1.46-1.59	0.6-2.0	0.18-0.21	0.0-0.2	2.0-7.0
	8-14	16-71	26-65	2-18	1.46-1.59	0.6-2.0	0.18-0.21	0.0-0.2	0.5-4.0
	14-25	16-71	26-65	2-18	1.44-1.59	0.6-2.0	0.17-0.20	0.0-0.2	0.0-1.0
	25-39	16-71	26-65	2-18	1.44-1.59	0.6-2.0	0.17-0.20	0.0-0.2	0.0-1.0
	39-60	16-79	21-65	0-18	1.44-1.59	2.0-20.0	0.01-0.15	0.0-0.2	0.0-0.5
740992									
Unadilla-----	0-8	16-32	51-65	13-18	1.46-1.59	0.6-2.0	0.18-0.21	0.0-0.2	2.0-7.0
	8-14	16-71	26-65	2-18	1.46-1.59	0.6-2.0	0.18-0.21	0.0-0.2	0.5-4.0
	14-25	16-71	26-65	2-18	1.44-1.59	0.6-2.0	0.17-0.20	0.0-0.2	0.0-1.0
	25-39	16-71	26-65	2-18	1.44-1.59	0.6-2.0	0.17-0.20	0.0-0.2	0.0-1.0
	39-60	16-79	21-65	0-18	1.44-1.59	2.0-20.0	0.01-0.15	0.0-0.2	0.0-0.5
740995									
Wellsboro, extremely stony	0-8	16-47	51-65	13-18	1.34-1.54	0.6-2.0	0.35-0.45	0.0-0.1	3.0-5.0
	8-15	16-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.2-2.5
	15-24	16-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.0-0.5
	24-29	16-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.0-0.5
	29-37	16-76	15-65	9-18	1.64-1.98	0.1-0.2	0.06-0.12	0.0-0.1	0.0-0.5
	37-60	16-76	15-65	9-18	1.64-1.98	0.1-0.2	0.06-0.12	0.0-0.1	0.0-0.5
740996									
Wellsboro, extremely stony	0-8	16-47	51-65	13-18	1.34-1.54	0.6-2.0	0.35-0.45	0.0-0.1	3.0-5.0
	8-15	16-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.2-2.5
	15-24	16-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.0-0.5
	24-29	16-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.0-0.5
	29-37	16-76	15-65	9-18	1.64-1.98	0.1-0.2	0.06-0.12	0.0-0.1	0.0-0.5
	37-60	16-76	15-65	9-18	1.64-1.98	0.1-0.2	0.06-0.12	0.0-0.1	0.0-0.5

# Soil Survey of Delaware Water Gap National Recreation Area

Table 15.--Physical Soil Properties--Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
741149 Lackawanna, extremely stony	0-2	0-68	0-44	0-17	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	2-3	53-68	17-44	2-17	1.30-1.52	0.6-2.0	0.10-0.16	0.0-0.1	3.0-6.0
	3-7	53-68	17-44	2-17	1.29-1.42	0.6-2.0	0.10-0.16	0.0-0.1	0.0-2.0
	7-8	53-68	17-44	2-17	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	2.0-6.0
	8-16	16-68	17-65	2-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.0-2.0
	16-24	16-68	17-65	2-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.0-2.0
	24-29	16-76	15-65	2-18	1.64-1.98	0.1-0.2	0.06-0.12	0.0-0.1	0.0-0.5
	29-60	16-76	15-65	2-18	1.64-1.98	0.1-0.2	0.06-0.12	0.0-0.1	0.0-0.5
741150 Lackawanna, extremely stony	0-2	0-68	0-44	0-17	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	2-3	53-68	17-44	2-17	1.30-1.52	0.6-2.0	0.10-0.16	0.0-0.1	3.0-6.0
	3-7	53-68	17-44	2-17	1.29-1.42	0.6-2.0	0.10-0.16	0.0-0.1	0.0-2.0
	7-8	53-68	17-44	2-17	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	2.0-6.0
	8-16	16-68	17-65	2-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.0-2.0
	16-24	16-68	17-65	2-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.0-2.0
	24-29	16-76	15-65	2-18	1.64-1.98	0.1-0.2	0.06-0.12	0.0-0.1	0.0-0.5
	29-60	16-76	15-65	2-18	1.64-1.98	0.1-0.2	0.06-0.12	0.0-0.1	0.0-0.5
801114 Oquaga-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-4	35-47	35-50	10-18	1.30-1.52	0.6-2.0	0.08-0.17	0.0-0.1	2.0-8.0
	4-20	16-68	17-65	2-18	1.29-1.59	0.6-2.0	0.04-0.12	0.0-0.1	0.0-2.0
	20-25	16-76	15-65	2-18	1.29-1.70	0.6-2.0	0.04-0.12	0.0-0.1	0.0-1.0
	25-80	---	---	---	---	---	---	---	---
810906 Oquaga-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-4	35-47	35-50	10-18	1.30-1.52	0.6-2.0	0.08-0.17	0.0-0.1	2.0-8.0
	4-20	16-68	17-65	2-18	1.29-1.59	0.6-2.0	0.04-0.12	0.0-0.1	0.0-2.0
	20-25	16-76	15-65	2-18	1.29-1.70	0.6-2.0	0.04-0.12	0.0-0.1	0.0-1.0
	25-80	---	---	---	---	---	---	---	---
1147465 Alden, extremely stony	0-2	0-30	0-55	0-22	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	2-7	23-30	50-55	18-22	1.34-1.54	0.6-2.0	0.16-0.22	0.0-0.1	4.0-10
	7-14	5-71	26-59	2-35	1.29-1.62	0.2-0.6	0.14-0.20	0.0-0.1	0.5-1.0
	14-28	5-71	26-59	2-35	1.29-1.62	0.2-0.6	0.14-0.20	0.0-0.1	0.5-1.0
	28-43	5-71	26-59	2-35	1.29-1.62	0.2-0.6	0.14-0.20	0.0-0.1	0.0-0.5
	43-60	5-68	17-59	8-35	1.29-1.62	0.1-0.6	0.08-0.15	0.0-0.1	0.0-0.5
1147467 Arnot, very rocky-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	35-47	35-50	10-18	1.30-1.42	0.6-5.9	0.10-0.15	0.0-0.2	3.0-6.0
	2-3	53-68	17-44	2-17	1.29-1.42	0.6-5.9	0.08-0.12	0.0-0.1	0.0-0.5
	3-4	53-68	17-44	2-17	1.29-1.59	0.6-5.9	0.08-0.12	0.0-0.1	0.0-0.5
	4-12	16-47	35-65	10-18	1.29-1.59	0.6-5.9	0.08-0.12	0.0-0.1	0.0-0.5
	12-17	16-47	35-65	10-18	1.29-1.59	0.6-5.9	0.08-0.12	0.0-0.1	0.0-0.5
	17-80	---	---	---	---	---	---	---	---

# Soil Survey of Delaware Water Gap National Recreation Area

Table 15.--Physical Soil Properties--Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
1147467 Lordstown, very rocky-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	35-47	35-50	10-18	1.30-1.52	0.6-2.0	0.11-0.17	0.0-0.2	3.0-8.0
	2-3	53-68	17-44	2-17	1.29-1.42	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	3-5	16-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	5-17	21-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	17-22	21-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	22-36	16-68	17-65	2-18	1.29-1.70	0.6-2.0	0.05-0.14	0.0-0.1	0.0-0.5
	36-80	---	---	---	---	---	---	---	---
1147468 Arnot-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	35-47	35-50	10-18	1.30-1.42	0.6-5.9	0.10-0.15	0.0-0.2	3.0-6.0
	2-3	53-68	17-44	2-17	1.29-1.42	0.6-5.9	0.08-0.12	0.0-0.1	0.0-0.5
	3-4	53-68	17-44	2-17	1.29-1.59	0.6-5.9	0.08-0.12	0.0-0.1	0.0-0.5
	4-12	16-47	35-65	10-18	1.29-1.59	0.6-5.9	0.08-0.12	0.0-0.1	0.0-0.5
	12-17	16-47	35-65	10-18	1.29-1.59	0.6-5.9	0.08-0.12	0.0-0.1	0.0-0.5
	17-80	---	---	---	---	---	---	---	---
Lordstown-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	35-47	35-50	10-18	1.30-1.52	0.6-2.0	0.11-0.17	0.0-0.2	3.0-8.0
	2-3	53-68	17-44	2-17	1.29-1.42	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	3-5	16-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	5-17	21-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	17-22	21-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	22-36	16-68	17-65	2-18	1.29-1.70	0.6-2.0	0.05-0.14	0.0-0.1	0.0-0.5
	36-80	---	---	---	---	---	---	---	---
1147469 Arnot-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	35-47	35-50	10-18	1.30-1.42	0.6-5.9	0.10-0.15	0.0-0.2	3.0-6.0
	2-3	53-68	17-44	2-17	1.29-1.42	0.6-5.9	0.08-0.12	0.0-0.1	0.0-0.5
	3-4	53-68	17-44	2-17	1.29-1.59	0.6-5.9	0.08-0.12	0.0-0.1	0.0-0.5
	4-12	16-47	35-65	10-18	1.29-1.59	0.6-5.9	0.08-0.12	0.0-0.1	0.0-0.5
	12-17	16-47	35-65	10-18	1.29-1.59	0.6-5.9	0.08-0.12	0.0-0.1	0.0-0.5
	17-80	---	---	---	---	---	---	---	---
Lordstown-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	35-47	35-50	10-18	1.30-1.52	0.6-2.0	0.11-0.17	0.0-0.2	3.0-8.0
	2-3	53-68	17-44	2-17	1.29-1.42	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	3-5	16-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	5-17	21-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	17-22	21-47	35-65	10-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.5-1.0
	22-36	16-68	17-65	2-18	1.29-1.70	0.6-2.0	0.05-0.14	0.0-0.1	0.0-0.5
	36-80	---	---	---	---	---	---	---	---
1147470 Atherton, very poorly drained-	0-2	0-30	0-55	0-25	0.13-0.23	5.9-20.0	0.45-0.55	0.0-0.0	70-100
	2-4	0-30	0-55	0-25	0.13-0.23	2.0-5.9	0.45-0.55	0.0-0.0	70-100
	4-8	20-30	50-55	21-25	1.34-1.54	0.2-2.0	0.16-0.21	0.0-0.1	10-25
	8-10	5-71	17-59	2-35	1.34-1.54	0.2-2.0	0.10-0.19	0.0-0.1	1.0-8.0
	10-18	5-71	17-59	2-35	1.56-1.73	0.2-2.0	0.10-0.19	0.0-0.1	0.0-2.0
	18-29	5-71	17-59	2-35	1.56-1.73	0.2-2.0	0.10-0.19	0.0-0.1	0.0-2.0
	29-32	5-71	17-59	2-35	1.56-1.73	0.2-2.0	0.10-0.19	0.0-0.1	0.0-2.0
	32-41	5-71	17-59	2-35	1.56-1.73	0.2-2.0	0.10-0.19	0.0-0.1	0.0-2.0
	41-45	5-71	17-59	2-35	1.42-1.70	0.6-5.9	0.05-0.12	0.0-0.1	0.0-1.0
	45-50	5-71	17-59	2-35	1.42-1.70	0.6-5.9	0.05-0.12	0.0-0.1	0.0-1.0
	50-60	5-71	17-59	2-35	1.42-1.70	0.6-5.9	0.05-0.12	0.0-0.1	0.0-1.0
	60-70	5-71	17-59	2-35	1.42-1.70	0.6-5.9	0.05-0.12	0.0-0.1	0.0-1.0



# Soil Survey of Delaware Water Gap National Recreation Area

Table 15.--Physical Soil Properties--Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
1147470 Atherton, poorly drained-	0-6	32-42	39-49	18-22	1.10-1.40	0.2-2.0	0.16-0.21	0.0-0.1	4.0-10
	6-12	5-71	17-59	2-35	1.25-1.55	0.2-2.0	0.10-0.19	0.0-0.1	0.0-2.0
	12-30	5-71	17-59	2-35	1.25-1.55	0.2-2.0	0.10-0.19	0.0-0.1	0.0-2.0
	30-40	5-76	10-59	2-35	1.45-1.65	0.6-5.9	0.05-0.12	0.0-0.1	0.0-1.0
	40-60	5-76	10-59	2-35	1.45-1.65	0.6-5.9	0.05-0.12	0.0-0.1	0.0-1.0
1147471 Catden-----	0-2	0-30	0-55	0-22	0.13-0.23	2.0-5.9	0.35-0.45	0.0-0.0	70-100
	2-13	0-30	0-55	0-22	0.13-0.23	0.2-5.9	0.35-0.45	0.0-0.0	70-100
	13-20	0-30	0-55	0-22	0.13-0.23	0.2-5.9	0.35-0.45	0.0-0.0	70-100
	20-32	0-30	0-55	0-22	0.13-0.23	0.2-5.9	0.35-0.45	0.0-0.0	70-100
	32-60	0-30	0-55	0-22	0.13-0.23	0.2-5.9	0.35-0.45	0.0-0.0	70-100
1147474 Chippewa, extremely stony	0-2	0-30	0-55	0-22	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	2-4	23-30	50-55	18-22	1.03-1.54	0.6-2.0	0.18-0.22	0.0-0.2	2.0-4.0
	4-8	5-42	39-59	18-35	1.16-1.50	0.6-2.0	0.10-0.17	0.0-0.1	0.3-0.5
	8-13	5-42	39-59	18-35	1.16-1.62	0.6-2.0	0.10-0.17	0.0-0.1	0.3-0.5
	13-21	5-68	17-59	8-35	1.71-1.98	0.0-0.2	0.01-0.02	0.0-0.1	0.2-0.4
	21-29	5-68	17-59	8-35	1.71-1.98	0.0-0.2	0.01-0.02	0.0-0.1	0.2-0.4
	29-34	5-68	17-59	8-35	1.42-1.98	0.0-0.2	0.01-0.02	0.0-0.1	0.1-0.3
	34-60	5-68	17-59	8-35	1.42-1.98	0.0-0.2	0.01-0.02	0.0-0.1	0.1-0.3
1147475 Colonie-----	0-2	76-79	21-24	0-1	1.24-1.45	2.0-20.0	0.09-0.10	0.0-0.1	1.0-2.0
	2-11	76-95	21-24	0-1	1.24-1.45	2.0-20.0	0.09-0.10	0.0-0.1	1.0-2.0
	11-24	76-98	2-24	0-1	1.29-1.51	2.0-20.0	0.06-0.08	0.0-0.1	0.0-0.5
	24-40	76-98	2-24	0-1	1.29-1.51	2.0-20.0	0.06-0.08	0.0-0.1	0.0-0.5
	40-62	76-98	2-24	0-1	1.29-1.51	2.0-20.0	0.06-0.08	0.0-0.1	0.0-0.5
1147478 Delaware, rarely flooded-	0-1	0-73	0-44	0-17	0.13-0.23	2.0-5.9	0.35-0.45	0.0-0.0	70-100
	1-4	53-73	17-44	2-17	1.24-1.52	2.0-5.9	0.15-0.21	0.0-0.2	2.0-4.5
	4-11	53-73	17-44	2-17	1.24-1.52	2.0-5.9	0.15-0.21	0.0-0.2	0.5-2.0
	11-20	53-68	17-44	2-17	1.29-1.42	2.0-5.9	0.07-0.20	0.0-0.1	0.0-0.5
	20-33	53-68	17-44	2-17	1.29-1.42	2.0-5.9	0.07-0.20	0.0-0.1	0.0-0.5
	33-41	53-68	17-44	2-17	1.29-1.42	2.0-5.9	0.07-0.20	0.0-0.1	0.0-0.5
	41-56	35-85	12-49	2-17	1.29-1.42	5.9-20.0	0.07-0.20	0.0-0.1	0.0-0.5
	56-60	35-85	12-49	2-17	1.29-1.42	5.9-20.0	0.05-0.15	0.0-0.1	0.0-0.5
1147482 Fredon, very stony-----	0-1	0-32	0-65	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-8	16-32	51-65	13-18	1.34-1.54	0.2-2.0	0.16-0.20	0.0-0.1	3.0-5.0
	8-14	16-71	17-65	2-18	1.42-1.59	0.2-2.0	0.12-0.20	0.0-0.1	0.5-1.0
	14-18	16-71	17-65	2-18	1.42-1.59	0.2-2.0	0.12-0.20	0.0-0.1	0.5-1.0
	18-23	16-71	17-65	2-18	1.42-1.59	0.2-2.0	0.12-0.20	0.0-0.1	0.5-1.0
	23-31	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.06	0.0-0.1	0.0-0.5
	31-36	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.06	0.0-0.1	0.0-0.5
	36-45	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.06	0.0-0.1	0.0-0.5
	45-55	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.06	0.0-0.1	0.0-0.5
	55-60	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.06	0.0-0.1	0.0-0.5

# Soil Survey of Delaware Water Gap National Recreation Area

Table 15.--Physical Soil Properties--Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
1147482 Halsey, very stony-----	0-1	0-32	0-65	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-5	16-32	51-65	13-18	1.34-1.54	0.6-5.9	0.14-0.24	0.0-0.1	3.0-5.0
	5-11	16-32	51-65	13-18	1.34-1.54	0.6-5.9	0.14-0.24	0.0-0.1	3.0-5.0
	11-20	16-71	17-65	2-18	1.42-1.59	0.6-5.9	0.12-0.18	0.0-0.1	0.5-1.5
	20-25	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.07	0.0-0.1	0.0-0.5
	25-35	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.07	0.0-0.1	0.0-0.5
	35-49	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.07	0.0-0.1	0.0-0.5
	49-56	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.07	0.0-0.1	0.0-0.5
	56-60	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.07	0.0-0.1	0.0-0.5
1147485 Hazen, very stony-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-10	35-47	35-50	10-18	1.30-1.52	0.6-5.9	0.12-0.18	0.0-0.2	1.8-5.2
	10-18	61-76	15-26	5-14	1.50-1.57	0.6-5.9	0.10-0.14	0.0-0.1	0.2-1.0
	18-29	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.08	0.0-0.1	0.1-0.5
	29-41	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.08	0.0-0.1	0.0-0.5
	41-60	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.08	0.0-0.1	0.0-0.5
Hoosic, very stony-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-9	35-47	35-50	10-18	1.30-1.52	2.0-20.0	0.11-0.16	0.0-0.2	1.8-5.2
	9-21	35-76	15-50	5-18	1.45-1.57	2.0-20.0	0.05-0.14	0.0-0.1	0.2-1.0
	21-27	82-98	2-13	0-7	0.67-1.58	20.0-99.9	0.01-0.05	0.0-0.1	0.0-0.5
	27-37	82-98	2-13	0-7	0.67-1.58	20.0-99.9	0.01-0.05	0.0-0.1	0.0-0.5
	37-49	82-98	2-13	0-7	0.67-1.58	20.0-99.9	0.01-0.05	0.0-0.1	0.0-0.5
	49-60	82-98	2-13	0-7	0.67-1.58	20.0-99.9	0.01-0.05	0.0-0.1	0.0-0.5
1147490 Hoosic, very stony-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-9	35-47	35-50	10-18	1.30-1.52	2.0-20.0	0.11-0.16	0.0-0.2	1.8-5.2
	9-21	35-76	15-50	5-18	1.45-1.57	2.0-20.0	0.05-0.14	0.0-0.1	0.2-1.0
	21-27	82-98	2-13	0-7	0.67-1.58	20.0-99.9	0.01-0.05	0.0-0.1	0.0-0.5
	27-37	82-98	2-13	0-7	0.67-1.58	20.0-99.9	0.01-0.05	0.0-0.1	0.0-0.5
	37-49	82-98	2-13	0-7	0.67-1.58	20.0-99.9	0.01-0.05	0.0-0.1	0.0-0.5
	49-60	82-98	2-13	0-7	0.67-1.58	20.0-99.9	0.01-0.05	0.0-0.1	0.0-0.5
Hazen, very stony-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-10	35-47	35-50	10-18	1.30-1.52	0.6-5.9	0.12-0.18	0.0-0.2	1.8-5.2
	10-18	61-76	15-26	5-14	1.50-1.57	0.6-5.9	0.10-0.14	0.0-0.1	0.2-1.0
	18-29	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.08	0.0-0.1	0.1-0.5
	29-41	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.08	0.0-0.1	0.0-0.5
	41-60	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.08	0.0-0.1	0.0-0.5
1147491 Hoosic, very stony-----	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-9	35-47	35-50	10-18	1.30-1.52	2.0-20.0	0.11-0.16	0.0-0.2	1.8-5.2
	9-21	35-76	15-50	5-18	1.45-1.57	2.0-20.0	0.05-0.14	0.0-0.1	0.2-1.0
	21-27	82-98	2-13	0-7	0.67-1.58	20.0-99.9	0.01-0.05	0.0-0.1	0.0-0.5
	27-37	82-98	2-13	0-7	0.67-1.58	20.0-99.9	0.01-0.05	0.0-0.1	0.0-0.5
	37-49	82-98	2-13	0-7	0.67-1.58	20.0-99.9	0.01-0.05	0.0-0.1	0.0-0.5
	49-60	82-98	2-13	0-7	0.67-1.58	20.0-99.9	0.01-0.05	0.0-0.1	0.0-0.5

# Soil Survey of Delaware Water Gap National Recreation Area

Table 15.--Physical Soil Properties--Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
1147491 Otisville, very stony-----	0-1	0-76	0-26	0-14	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	61-76	15-26	9-14	1.24-1.68	5.9-20.0	0.09-0.12	0.0-0.5	1.8-5.2
	2-7	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.09-0.12	0.0-0.3	0.0-0.5
	7-11	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.09-0.12	0.0-0.1	0.0-0.5
	11-19	82-98	2-13	0-7	0.67-1.58	5.9-20.0	0.02-0.05	0.0-0.1	0.0-0.5
	19-31	82-98	2-13	0-7	0.67-1.58	5.9-99.9	0.01-0.02	0.0-0.1	0.0-0.5
	31-43	82-98	2-13	0-7	0.67-1.58	5.9-99.9	0.01-0.02	0.0-0.1	0.0-0.5
	43-60	82-98	2-13	0-7	0.67-1.58	5.9-99.9	0.01-0.02	0.0-0.1	0.0-0.5
1147492 Lackawanna, extremely stony	0-2	0-68	0-44	0-17	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	2-3	53-68	17-44	2-17	1.30-1.52	0.6-2.0	0.10-0.16	0.0-0.1	3.0-6.0
	3-7	53-68	17-44	2-17	1.29-1.42	0.6-2.0	0.10-0.16	0.0-0.1	0.0-2.0
	7-8	53-68	17-44	2-17	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	2.0-6.0
	8-16	16-68	17-65	2-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.0-2.0
	16-24	16-68	17-65	2-18	1.29-1.59	0.6-2.0	0.10-0.16	0.0-0.1	0.0-2.0
	24-29	16-76	15-65	2-18	1.64-1.98	0.1-0.2	0.06-0.12	0.0-0.1	0.0-0.5
	29-60	16-76	15-65	2-18	1.64-1.98	0.1-0.2	0.06-0.12	0.0-0.1	0.0-0.5
1147500 Wurtsboro, extremely stony	0-2	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	2-3	35-47	35-50	10-18	1.24-1.68	0.6-5.9	0.10-0.16	0.0-0.2	1.8-5.2
	3-5	35-68	17-50	2-18	1.29-1.42	0.6-5.9	0.10-0.16	0.0-0.1	0.0-1.0
	5-6	35-68	17-50	2-18	1.29-1.42	0.6-5.9	0.10-0.16	0.0-0.1	0.5-2.0
	6-18	35-76	15-50	2-18	1.29-1.70	0.6-5.9	0.10-0.14	0.0-0.1	0.0-1.0
	18-24	35-76	15-50	2-18	1.29-1.70	0.6-5.9	0.10-0.14	0.0-0.1	0.0-1.0
	24-30	35-76	15-50	2-18	1.64-1.98	0.1-0.2	0.08-0.12	0.0-0.1	0.0-0.5
	30-60	35-76	15-50	2-18	1.64-1.98	0.1-0.2	0.08-0.12	0.0-0.1	0.0-0.5
1147501 Wurtsboro, extremely stony	0-2	0-68	0-44	0-17	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	2-3	53-68	17-44	2-17	1.24-1.68	0.6-5.9	0.10-0.16	0.0-0.2	1.8-5.2
	3-4	35-68	17-50	2-18	1.29-1.42	0.6-5.9	0.10-0.16	0.0-0.1	0.0-1.0
	4-6	35-68	17-50	2-18	1.29-1.42	0.6-5.9	0.10-0.16	0.0-0.1	0.5-2.0
	6-18	35-76	15-50	2-18	1.29-1.70	0.6-5.9	0.10-0.14	0.0-0.1	0.0-1.0
	18-24	35-76	15-50	2-18	1.29-1.70	0.6-5.9	0.10-0.14	0.0-0.1	0.0-1.0
	24-33	35-76	15-50	2-18	1.64-1.98	0.1-0.2	0.08-0.12	0.0-0.1	0.0-0.5
	33-60	35-76	15-50	2-18	1.64-1.98	0.1-0.2	0.08-0.12	0.0-0.1	0.0-0.5
Swartswood, extremely stony	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	35-47	35-50	10-18	1.29-1.52	0.6-5.9	0.08-0.12	0.0-0.2	1.8-5.2
	2-3	53-76	15-44	2-17	1.29-1.51	0.6-5.9	0.08-0.12	0.0-0.1	0.0-1.0
	3-4	53-76	15-44	2-17	1.29-1.51	0.6-5.9	0.08-0.12	0.0-0.1	0.5-2.0
	4-21	35-76	15-50	2-18	1.29-1.70	0.6-5.9	0.08-0.12	0.0-0.1	0.0-1.0
	21-32	35-76	15-50	8-18	1.64-1.98	0.1-0.6	0.06-0.10	0.0-0.1	0.0-0.5
	32-60	35-76	15-50	8-18	1.64-1.98	0.1-0.6	0.06-0.10	0.0-0.1	0.0-0.5
1147502 Wurtsboro, extremely stony	0-2	0-68	0-44	0-17	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	2-3	53-68	17-44	2-17	1.24-1.68	0.6-5.9	0.10-0.16	0.0-0.2	1.8-5.2
	3-4	35-68	17-50	2-18	1.29-1.42	0.6-5.9	0.10-0.16	0.0-0.1	0.0-1.0
	4-6	35-68	17-50	2-18	1.29-1.42	0.6-5.9	0.10-0.16	0.0-0.1	0.5-2.0
	6-18	35-76	15-50	2-18	1.29-1.70	0.6-5.9	0.10-0.14	0.0-0.1	0.0-1.0
	18-24	35-76	15-50	2-18	1.29-1.70	0.6-5.9	0.10-0.14	0.0-0.1	0.0-1.0
	24-33	35-76	15-50	2-18	1.64-1.98	0.1-0.2	0.08-0.12	0.0-0.1	0.0-0.5
	33-60	35-76	15-50	2-18	1.64-1.98	0.1-0.2	0.08-0.12	0.0-0.1	0.0-0.5

# Soil Survey of Delaware Water Gap National Recreation Area

Table 15.--Physical Soil Properties--Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
1147502 Swartswood, extremely stony	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	35-47	35-50	10-18	1.29-1.52	0.6-5.9	0.08-0.12	0.0-0.2	1.8-5.2
	2-3	53-76	15-44	2-17	1.29-1.51	0.6-5.9	0.08-0.12	0.0-0.1	0.0-1.0
	3-4	53-76	15-44	2-17	1.29-1.51	0.6-5.9	0.08-0.12	0.0-0.1	0.5-2.0
	4-21	35-76	15-50	2-18	1.29-1.70	0.6-5.9	0.08-0.12	0.0-0.1	0.0-1.0
	21-32	35-76	15-50	8-18	1.64-1.98	0.1-0.6	0.06-0.10	0.0-0.1	0.0-0.5
	32-60	35-76	15-50	8-18	1.64-1.98	0.1-0.6	0.06-0.10	0.0-0.1	0.0-0.5
1147527 Udorthents-----	0-12	35-47	35-50	10-18	1.30-1.52	0.1-0.2	0.00-0.00	0.0-0.2	2.0-4.0
	12-72	35-98	2-50	0-18	0.67-1.58	0.2-20.0	0.08-0.19	0.0-0.1	0.5-1.0
1147532 Udorthents-----	0-12	35-47	35-50	10-18	1.30-1.52	0.1-0.2	0.00-0.00	0.0-0.2	2.0-4.0
	12-72	35-98	2-50	0-18	0.67-1.58	0.2-20.0	0.08-0.19	0.0-0.1	0.5-1.0
1147533 Wurtsboro, extremely stony	0-2	0-68	0-44	0-17	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	2-3	53-68	17-44	2-17	1.24-1.68	0.6-5.9	0.10-0.16	0.0-0.2	1.8-5.2
	3-4	35-68	17-50	2-18	1.29-1.42	0.6-5.9	0.10-0.16	0.0-0.1	0.0-1.0
	4-6	35-68	17-50	2-18	1.29-1.42	0.6-5.9	0.10-0.16	0.0-0.1	0.5-2.0
	6-18	35-76	15-50	2-18	1.29-1.70	0.6-5.9	0.10-0.14	0.0-0.1	0.0-1.0
	18-24	35-76	15-50	2-18	1.29-1.70	0.6-5.9	0.10-0.14	0.0-0.1	0.0-1.0
	24-33	35-76	15-50	2-18	1.64-1.98	0.1-0.2	0.08-0.12	0.0-0.1	0.0-0.5
	33-60	35-76	15-50	2-18	1.64-1.98	0.1-0.2	0.08-0.12	0.0-0.1	0.0-0.5
Swartswood, extremely stony	0-1	0-47	0-50	0-18	0.13-0.23	5.9-20.0	0.35-0.45	0.0-0.0	70-100
	1-2	35-47	35-50	10-18	1.29-1.52	0.6-5.9	0.08-0.12	0.0-0.2	1.8-5.2
	2-3	53-76	15-44	2-17	1.29-1.51	0.6-5.9	0.08-0.12	0.0-0.1	0.0-1.0
	3-4	53-76	15-44	2-17	1.29-1.51	0.6-5.9	0.08-0.12	0.0-0.1	0.5-2.0
	4-21	35-76	15-50	2-18	1.29-1.70	0.6-5.9	0.08-0.12	0.0-0.1	0.0-1.0
	21-32	35-76	15-50	8-18	1.64-1.98	0.1-0.6	0.06-0.10	0.0-0.1	0.0-0.5
	32-60	35-76	15-50	8-18	1.64-1.98	0.1-0.6	0.06-0.10	0.0-0.1	0.0-0.5
1948749 Arnot-----	0-8	31	56	8-18	1.10-1.40	0.6-2.0	0.10-0.15	0.0-2.9	3.0-6.0
	8-16	31	56	8-18	1.20-1.50	0.6-2.0	0.08-0.12	0.0-2.9	0.1-3.0
	16-26	---	---	---	---	0.2-2.0	0.00-0.00	---	---
1948750 Arnot-----	0-8	31	56	8-18	1.10-1.40	0.6-2.0	0.10-0.15	0.0-2.9	3.0-6.0
	8-16	31	56	8-18	1.20-1.50	0.6-2.0	0.08-0.12	0.0-2.9	0.1-3.0
	16-26	---	---	---	---	0.2-2.0	0.00-0.00	---	---
1948751 Arnot-----	0-8	31	56	8-18	1.10-1.40	0.6-2.0	0.10-0.15	0.0-2.9	3.0-6.0
	8-16	31	56	8-18	1.20-1.50	0.6-2.0	0.08-0.12	0.0-2.9	0.1-3.0
	16-26	---	---	---	---	0.2-2.0	0.00-0.00	---	---
1948774 Conotton-----	0-9	43	38	8-25	1.30-1.50	2.0-6.0	0.10-0.14	0.0-2.9	0.5-3.0
	9-45	41	37	6-25	1.25-1.60	6.0-20.0	0.06-0.10	0.0-2.9	0.5-1.0
	45-80	84	11	2-9	1.20-1.50	6.0-20.0	0.02-0.06	0.0-2.9	0.1-0.5
1948775 Conotton-----	0-9	42	38	8-25	1.30-1.50	2.0-6.0	0.10-0.14	0.0-2.9	0.5-3.0
	9-45	40	38	6-25	1.25-1.60	6.0-20.0	0.06-0.10	0.0-2.9	0.5-1.0
	45-80	84	11	2-9	1.20-1.50	6.0-20.0	0.02-0.06	0.0-2.9	0.1-0.5

# Soil Survey of Delaware Water Gap National Recreation Area

Table 15.--Physical Soil Properties--Continued

Map unit symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Shrink- swell potential	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
1948776									
Conotton-----	0-9	42	38	8-25	1.30-1.50	2.0-6.0	0.10-0.14	0.0-2.9	0.5-3.0
	9-45	40	38	6-25	1.25-1.60	6.0-20.0	0.06-0.10	0.0-2.9	0.5-1.0
	45-80	84	11	2-9	1.20-1.50	6.0-20.0	0.02-0.06	0.0-2.9	0.1-0.5
1948777									
Conotton-----	0-9	42	38	8-25	1.30-1.50	2.0-6.0	0.10-0.14	0.0-2.9	0.5-3.0
	9-45	40	38	6-25	1.25-1.60	6.0-20.0	0.06-0.10	0.0-2.9	0.5-1.0
	45-80	84	11	2-9	1.20-1.50	6.0-20.0	0.02-0.06	0.0-2.9	0.1-0.5
1948797									
Manlius-----	0-8	32	56	6-18	1.10-1.40	0.6-2.0	0.10-0.18	0.0-2.9	1.0-5.0
	8-24	32	56	6-18	1.20-1.50	0.6-2.0	0.08-0.12	0.0-2.9	0.0-1.0
	24-32	32	56	6-18	1.70-1.95	0.6-2.0	0.03-0.09	0.0-2.9	0.0-0.0
	32-40	---	---	---	---	0.2-2.0	0.00-0.00	---	---
1948802									
Manlius-----	0-8	32	56	6-18	1.10-1.40	0.6-2.0	0.10-0.18	0.0-2.9	1.0-5.0
	8-24	32	56	6-18	1.20-1.50	0.6-2.0	0.08-0.12	0.0-2.9	0.0-1.0
	24-32	32	56	6-18	1.70-1.95	0.6-2.0	0.03-0.09	0.0-2.9	0.0-0.0
	32-40	---	---	---	---	0.2-2.0	0.00-0.00	---	---
1948818									
Manlius-----	0-8	32	56	6-18	1.10-1.40	0.6-2.0	0.10-0.18	0.0-2.9	1.0-5.0
	8-24	32	56	6-18	1.20-1.50	0.6-2.0	0.08-0.12	0.0-2.9	0.0-1.0
	24-32	32	56	6-18	1.70-1.95	0.6-2.0	0.03-0.09	0.0-2.9	0.0-0.0
	32-40	---	---	---	---	0.2-2.0	0.00-0.00	---	---
1948832									
Penargyl-----	0-12	26	54	15-25	1.20-1.50	0.6-2.0	0.10-0.14	0.0-2.9	1.0-3.0
	12-74	18	55	20-34	1.20-1.50	0.6-2.0	0.12-0.16	0.0-2.9	0.0-0.5
	74-80	38	36	18-32	1.30-1.50	0.2-6.0	0.08-0.11	0.0-2.9	0.0-0.5
	80-90	---	---	---	---	0.6-2.0	---	---	---
1948846									
Phelps-----	0-10	27	54	10-28	1.10-1.40	0.6-2.0	0.13-0.20	0.0-2.9	3.0-6.0
	10-22	38	36	18-35	1.25-1.55	0.6-2.0	0.08-0.13	0.0-2.9	0.0-0.5
	22-30	34	38	18-35	1.25-1.55	0.6-2.0	0.09-0.18	0.0-2.9	0.0-0.5
	30-79	92	5	1-5	1.45-1.65	2.0-20.0	0.01-0.04	0.0-2.9	0.0-0.5
1948855									
Udorthents, loamy-----	0-5	42	38	5-35	1.20-1.80	0.1-20.0	0.06-0.15	0.0-2.9	0.0-5.0
	5-40	42	38	5-35	1.20-1.80	0.1-20.0	0.06-0.15	0.0-2.9	0.0-5.0
	40-70	42	38	5-35	1.30-1.90	0.1-6.0	0.04-0.13	0.0-2.9	0.0-0.2
1948989									
Delaware-----	0-10	47	45	2-10	1.15-1.40	2.0-6.0	0.15-0.21	0.0-2.9	2.0-4.0
	10-40	62	34	2-7	1.15-1.45	2.0-6.0	0.07-0.20	0.0-2.9	0.0-0.5
	40-87	79	16	2-7	1.25-1.55	6.0-20.0	0.04-0.10	0.0-2.9	0.0-0.5

# Soil Survey of Delaware Water Gap National Recreation Area

Table 16.--Erosion Properties

[Entries under "Erosion factors" apply to the entire profile.  
 Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer]

Map unit symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
	<i>In</i>					
290836						
Hoosic, very stony-----	0-1	---	---	3	6	48
	1-9	.10	.24			
	9-21	.05	.20			
	21-27	.02	.10			
	27-37	.02	.05			
	37-49	.02	.05			
	49-60	.02	.05			
Otisville, very stony--	0-1	---	---	5	5	56
	1-2	.05	.10			
	2-7	.05	.20			
	7-11	.05	.10			
	11-19	.05	.10			
	19-31	.02	.05			
	31-43	.02	.05			
	43-60	.05	.05			
296265						
Alden-----	0-9	.37	.37	5	8	0
	9-35	.37	.37			
	35-60	.28	.32			
296269						
Fluvents, (alluvial land)-----	0-6	.43	.49	5	3	86
	6-42	.37	.43			
	42-60	.32	.32			
296271						
Alvira-----	0-10	.24	.32	3	8	0
	10-21	.28	.32			
	21-60	.28	.32			
Watson-----	0-10	.28	.37	3	8	0
	10-27	.17	.20			
	27-60	.17	.20			
296272						
Bath-----	0-8	.24	.32	3	5	56
	8-27	.24	.28			
	27-60	.24	.32			
	60-64	.24	.32			
296273						
Bath-----	0-8	.24	.32	3	5	56
	8-27	.24	.28			
	27-60	.24	.32			
	60-64	.24	.32			
296274						
Bath-----	0-8	.24	.32	3	5	56
	8-27	.24	.28			
	27-60	.24	.32			
	60-64	.24	.32			

# Soil Survey of Delaware Water Gap National Recreation Area

Table 16.--Erosion Properties--Continued

Map unit symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
	<i>In</i>					
296275						
Bath-----	0-8	.24	.32	3	8	0
	8-27	.24	.28			
	27-60	.24	.32			
	60-64	.24	.32			
296276						
Bath-----	0-8	.24	.32	3	8	0
	8-27	.24	.28			
	27-60	.24	.32			
	60-64	.24	.32			
296277						
Benson-----	0-8	.20	.28	2	6	48
	8-18	.17	.24			
	18-22	---	---			
296278						
Benson-----	0-8	.20	.28	2	6	48
	8-18	.17	.24			
	18-22	---	---			
Rock outcrop.						
296279						
Benson-----	0-8	.20	.28	2	6	48
	8-18	.17	.24			
	18-22	---	---			
Rock outcrop.						
296280						
Braceville-----	0-3	.20	.24	3	5	56
	3-30	.20	.24			
	30-55	.20	.24			
	55-60	.20	.24			
296281						
Braceville-----	0-3	.20	.24	3	5	56
	3-30	.20	.24			
	30-55	.20	.24			
	55-60	.20	.24			
296283						
Buchanan-----	0-4	.24	.32	3	8	0
	4-25	.24	.28			
	25-60	.17	.24			
296288						
Chippewa-----	0-8	.32	.28	3	8	0
	8-16	.32	.37			
	16-48	.24	.28			
	48-80	.24	.32			
Norwich-----	0-8	.32	.32	3	8	0
	8-16	.24	.28			
	16-48	.24	.28			
	48-80	.24	.32			

# Soil Survey of Delaware Water Gap National Recreation Area

Table 16.--Erosion Properties--Continued

Map unit symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
	<i>In</i>					
296289						
Chippewa-----	0-8	.24	.28	3	8	0
	8-16	.32	.37			
	16-48	.24	.32			
	48-80	.24	.32			
Norwich-----	0-8	.24	.32	3	8	0
	8-16	.24	.28			
	16-48	.24	.32			
	48-80	.24	.32			
296295						
Udorthents, cut and fill.						
296297						
Dekalb-----	0-7	.17	.24	3	8	0
	7-24	.17	.24			
	24-32	.17	.24			
	32-36	---	---			
296298						
Dekalb-----	0-7	.17	.24	3	8	0
	7-24	.17	.24			
	24-32	.17	.24			
	32-36	---	---			
296303						
Hazleton-----	0-5	.15	.17	3	8	0
	5-31	.15	.20			
	31-58	.15	.20			
	58-69	---	---			
296304						
Holly-----	0-8	.28	.28	5	8	0
	8-28	.28	.32			
	28-41	.28	.32			
	41-60	.28	.37			
296311						
Lackawanna-----	0-8	.24	.32	3	6	48
	8-25	.20	.28			
	25-60	.20	.24			
Bath-----	0-8	.24	.32	3	8	0
	8-27	.24	.28			
	27-60	.24	.28			
	60-64	.24	.28			
296312						
Lackawanna-----	0-8	.24	.32	3	6	48
	8-25	.20	.28			
	25-60	.20	.24			
296313						
Lackawanna-----	0-8	.24	.32	3	6	48
	8-25	.20	.28			
	25-60	.20	.24			
296315						
Lackawanna-----	0-8	.24	.32	3	6	48
	8-25	.20	.28			
	25-60	.20	.24			



# Soil Survey of Delaware Water Gap National Recreation Area

Table 16.--Erosion Properties--Continued

Map unit symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
	<i>In</i>					
296316						
Lackawanna-----	0-8	.24	.32	3	6	48
	8-25	.20	.28			
	25-60	.20	.24			
296317						
Laidig-----	0-6	.24	.32	4	8	0
	6-33	.24	.28			
	33-65	.17	.20			
296326						
Lordstown-----	0-7	.20	.28	3	8	0
	7-26	.20	.28			
	26-30	.28	.37			
	30-42	---	---			
296327						
Lordstown-----	0-7	.20	.28	3	8	0
	7-26	.20	.28			
	26-30	.28	.37			
	30-42	---	---			
296328						
Lordstown-----	0-7	.20	.28	3	8	0
	7-26	.28	.32			
	26-30	.28	.37			
	30-42	---	---			
Oquaga-----	0-7	.20	.37	3	8	0
	7-30	.20	.28			
	30-42	---	---			
296329						
Mardin-----	0-8	.24	.32	3	5	56
	8-17	.24	.28			
	17-21	.24	.28			
	21-60	.24	.32			
	60-80	.24	.32			
296330						
Mardin-----	0-8	.24	.32	3	5	56
	8-17	.24	.28			
	17-21	.24	.28			
	21-60	.24	.32			
	60-80	.24	.32			
296331						
Mardin-----	0-8	.24	.32	3	8	0
	8-17	.24	.37			
	17-21	.24	.37			
	21-60	.24	.64			
	60-80	.24	.64			
296332						
Mardin-----	0-8	.24	.32	3	8	0
	8-17	.24	.37			
	17-21	.24	.37			
	21-60	.24	.64			
	60-80	.24	.64			

# Soil Survey of Delaware Water Gap National Recreation Area

Table 16.--Erosion Properties--Continued

Map unit symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
	<i>In</i>					
296335						
Meckesville-----	0-9	.28	.32	4	6	48
	9-36	.24	.28			
	36-60	.24	.28			
	60-64	.24	.32			
296337						
Meckesville-----	0-9	.24	.32	4	8	0
	9-36	.24	.28			
	36-60	.24	.28			
	60-64	.24	.32			
296338						
Morris-----	0-8	.28	.55	3	5	56
	8-17	.24	.49			
	17-70	.24	.49			
	70-80	.24	.49			
296339						
Morris-----	0-8	.24	.32	3	8	0
	8-17	.24	.32			
	17-70	.24	.28			
	70-80	.24	.28			
296340						
Morris-----	0-8	.24	.32	3	8	0
	8-17	.24	.32			
	17-70	.24	.28			
	70-80	.24	.28			
296341						
Freetown, mucky peat---	0-6	.05	.05	3	8	0
	6-72	.05	.05			
296342						
Paupack, mucky peat (shallow)-----	0-3	.05	.05	2	8	0
	3-26	.05	.05			
	26-36	.10	.24			
	36-70	.17	.28			
296343						
Oquaga-----	0-7	.28	.37	3	6	48
	7-30	.20	.32			
	30-42	---	---			
Lackawanna-----	0-8	.28	.32	3	6	48
	8-25	.20	.24			
	25-60	.20	.24			
296344						
Oquaga-----	0-7	.28	.37	3	6	48
	7-30	.20	.32			
	30-42	---	---			
Lackawanna-----	0-8	.28	.32	3	6	48
	8-25	.20	.24			
	25-60	.20	.24			
296346						
Oquaga-----	0-7	.20	.37	3	8	0
	7-30	.20	.28			
	30-42	---	---			

# Soil Survey of Delaware Water Gap National Recreation Area

Table 16.--Erosion Properties--Continued

Map unit symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
	<i>In</i>					
296346						
Lackawanna-----	0-8	.24	.32	3	7	38
	8-25	.20	.28			
	25-60	.20	.24			
296347						
Oquaga-----	0-7	.20	.37	3	8	0
	7-30	.20	.28			
	30-42	---	---			
Lackawanna-----	0-8	.24	.32	3	7	38
	8-25	.20	.28			
	25-60	.20	.24			
296348						
Philo-----	0-10	.37	.37	5	5	56
	10-40	.32	.32			
	40-60	.24	.28			
296349						
Pope-----	0-10	.37	.37	5	5	56
	10-30	.28	.28			
	30-60	.28	.20			
296350						
Pope-----	0-10	.37	.37	5	5	56
	10-30	.28	.28			
	30-60	.28	.20			
296351						
Rexford, somewhat poorly drained-----	0-8	.24	.28	3	8	0
	8-18	.20	.32			
	18-40	.20	.32			
	40-63	.20	.32			
Rexford, poorly drained	0-8	.24	.28	3	8	0
	8-18	.20	.32			
	18-40	.20	.32			
	40-63	.20	.32			
296355						
Sheffield-----	0-7	.37	.37	4	8	0
	7-19	.37	.43			
	19-38	.37	.43			
	38-66	.37	.43			
296363						
Dystrochrepts, very stony-----	0-6	.15	.24	3	8	0
	6-32	.15	.24			
	32-56	.15	.24			
	56-60	---	---			
296369						
Wayland-----	0-9	.43	.43	5	8	0
	9-41	.43	.43			
	41-60	.43	.43			

# Soil Survey of Delaware Water Gap National Recreation Area

Table 16.--Erosion Properties--Continued

Map unit symbol and soil name	Depth	Erosion factors			Wind	Wind
		Kw	Kf	T	erodi- bility group	erodi- bility index
	<i>In</i>					
296376						
Wellsboro-----	0-8	.24	.32	3	6	48
	8-17	.28	.43			
	17-21	.28	.43			
	21-60	.28	.32			
	60-80	.28	.32			
296379						
Wellsboro-----	0-8	.24	.32	3	8	0
	8-17	.28	.43			
	17-21	.28	.43			
	21-60	.28	.32			
	60-80	.28	.32			
296385						
Wyoming-----	0-7	.17	.20	3	6	48
	7-25	.17	.24			
	25-60	.17	.24			
296386						
Wyoming-----	0-7	.17	.20	3	6	48
	7-25	.17	.24			
	25-60	.17	.24			
296387						
Wyoming-----	0-7	.17	.20	3	6	48
	7-25	.17	.24			
	25-60	.17	.24			
296388						
Wyoming-----	0-7	.17	.20	3	6	48
	7-25	.17	.24			
	25-60	.17	.24			
296389						
Wyoming-----	0-8	.17	.20	3	6	48
	8-26	.17	.24			
	26-60	.17	.24			
296390						
Water.						
297185						
Edgemere-----	0-2	.10	.10	3	8	0
	2-5	.20	.43			
	5-24	.24	.37			
	24-66	.24	.55			
Shohola-----	0-3	.20	.37	3	8	0
	3-24	.24	.37			
	24-72	.24	.28			
297186						
Edgemere-----	0-2	.10	.10	3	8	0
	2-5	.20	.43			
	5-24	.24	.37			
	24-66	.24	.55			
297188						
Manlius-----	0-5	.20	.32	2	8	0
	5-24	.20	.28			
	24-30	.20	.32			
	30-40	---	---			

# Soil Survey of Delaware Water Gap National Recreation Area

Table 16.--Erosion Properties--Continued

Map unit symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
	<i>In</i>					
297188						
Arnot-----	0-3	.24	.28	1	8	0
	3-14	.17	.24			
	14-24	---	---			
Rock outcrop.						
297189						
Manlius-----	0-5	.20	.32	2	8	0
	5-24	.20	.28			
	24-30	.20	.32			
	30-40	---	---			
Arnot-----	0-3	.24	.28	1	8	0
	3-14	.17	.24			
	14-24	---	---			
Rock outcrop.						
297190						
Braceville-----	0-11	.32	.37	4	3	86
	11-27	.32	.43			
	27-48	.28	.43			
	48-70	.20	.28			
297191						
Wyalusing-----	0-6	.37	.37	5	8	0
	6-31	.28	.32			
	31-70	.10	.17			
297192						
Pope-----	0-6	.28	.28	5	3	86
	6-33	.28	.28			
	33-70	.28	.20			
297193						
Paupack-----	0-3	.05	.05	2	8	0
	3-26	.05	.05			
	26-36	.10	.24			
	36-70	.17	.28			
297196						
Freetown-----	0-6	.05	.05	3	8	0
	6-72	.05	.05			
297197						
Manlius-----	0-5	.28	.32	2	8	0
	5-24	.20	.28			
	24-30	.20	.32			
	30-40	---	---			
297198						
Manlius-----	0-5	.28	.32	2	8	0
	5-24	.20	.28			
	24-30	.20	.32			
	30-40	---	---			
297201						
Oquaga-----	0-2	.20	.37	2	8	0
	2-26	.20	.28			
	26-32	.20	.28			
	32-42	---	---			

# Soil Survey of Delaware Water Gap National Recreation Area

Table 16.--Erosion Properties--Continued

Map unit symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
	<i>In</i>					
297203						
Delaware-----	0-14	.28	.28	4	3	86
	14-48	.28	.28			
	48-72	.28	.28			
297204						
Delaware-----	0-14	.28	.28	4	3	86
	14-48	.28	.28			
	48-72	.28	.28			
297205						
Delaware-----	0-14	.28	.28	4	3	86
	14-48	.28	.28			
	48-72	.28	.28			
297209						
Philo-----	0-6	.37	.37	4	5	56
	6-36	.32	.32			
	36-70	.10	.24			
297210						
Barbour-----	0-10	.32	.32	3	5	56
	10-38	.32	.37			
	38-72	.17	.20			
297216						
Wurtsboro-----	0-4	.24	.32	4	8	0
	4-22	.28	.32			
	22-70	.28	.32			
297217						
Wurtsboro-----	0-4	.24	.32	4	8	0
	4-22	.28	.32			
	22-70	.28	.32			
297227						
Arnot-----	0-3	.17	.28	1	8	0
	3-10	.17	.24			
	10-14	.17	.24			
	14-24	---	---			
297228						
Arnot-----	0-3	.17	.28	1	8	0
	3-10	.17	.24			
	10-14	.17	.24			
	14-24	---	---			
297229						
Wyoming-----	0-3	.17	.20	5	6	48
	3-33	.17	.24			
	33-72	.17	.24			
297230						
Wyoming-----	0-3	.17	.20	5	6	48
	3-33	.17	.24			
	33-72	.17	.24			
297231						
Wyoming-----	0-3	.17	.20	5	6	48
	3-33	.17	.24			
	33-72	.17	.24			

# Soil Survey of Delaware Water Gap National Recreation Area

Table 16.--Erosion Properties--Continued

Map unit symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
	<i>In</i>					
297236						
Suncook-----	0-10	.17	.17	5	2	134
	10-70	.10	.15			
297237						
Mardin-----	0-8	.24	.32	3	8	0
	8-17	.24	.28			
	17-21	.24	.28			
	21-30	.24	.32			
	30-60	.24	.32			
	60-80	.24	.32			
297238						
Mardin-----	0-8	.24	.32	3	8	0
	8-17	.24	.28			
	17-21	.24	.28			
	21-30	.24	.32			
	30-60	.24	.32			
	60-80	.24	.32			
297239						
Mardin-----	0-8	.24	.32	3	8	0
	8-17	.24	.28			
	17-21	.24	.28			
	21-30	.24	.32			
	30-60	.24	.32			
	60-80	.24	.32			
297240						
Mardin-----	0-8	.24	.32	3	8	0
	8-17	.24	.28			
	17-21	.24	.28			
	21-30	.24	.32			
	30-60	.24	.32			
	60-80	.24	.32			
297241						
Unadilla-----	0-13	.49	.49	3	5	56
	13-49	.64	.64			
	49-80	.64	.64			
297242						
Shohola-----	0-3	.20	.37	3	8	0
	3-24	.24	.37			
	24-72	.24	.28			
Edgemere-----	0-2	.10	.10	3	8	0
	2-5	.20	.43			
	5-24	.24	.37			
	24-66	.24	.55			
297243						
Shohola-----	0-3	.20	.37	3	8	0
	3-24	.24	.37			
	24-72	.24	.28			
Edgemere-----	0-2	.10	.10	3	8	0
	2-5	.20	.43			
	5-24	.24	.37			
	24-66	.24	.55			

# Soil Survey of Delaware Water Gap National Recreation Area

Table 16.--Erosion Properties--Continued

Map unit symbol and soil name	Depth	Erosion factors			Wind	Wind
		Kw	Kf	T	erodi- bility group	erodi- bility index
	<i>In</i>					
297244						
Lordstown-----	0-3	.20	.28	2	8	0
	3-28	.28	.32			
	28-30	.28	.37			
	30-40	---	---			
Swartswood-----	0-4	.17	.28	4	8	0
	4-32	.20	.24			
	32-70	.20	.28			
297247						
Chenango-----	0-10	.28	.43	3	5	56
	10-29	.17	.28			
	29-70	.10	.20			
297248						
Chenango-----	0-10	.28	.43	3	5	56
	10-29	.17	.28			
	29-70	.10	.20			
297249						
Chenango-----	0-10	.28	.43	3	5	56
	10-29	.17	.28			
	29-70	.10	.20			
297253						
Craigsville-----	0-5	.17	.28	5	8	0
	5-27	.17	.28			
	27-77	.17	.28			
Wyoming-----	0-3	.17	.20	5	8	0
	3-33	.17	.24			
	33-72	.17	.24			
297254						
Pits, shale-----	0-1	---	---	---	8	0
	1-2	---	---			
Pits, gravel-----	---	---	---	---	8	0
298049						
Wurtsboro, extremely stony-----	0-2	---	---	3	5	56
	2-3	.24	.24			
	3-5	.32	.32			
	5-6	.37	.37			
	6-18	.32	.32			
	18-24	.17	.32			
	24-30	.17	.32			
	30-60	.17	.32			
298050						
Wurtsboro, extremely stony-----	0-2	---	---	3	3	86
	2-3	.20	.20			
	3-4	.32	.32			
	4-6	.32	.32			
	6-18	.32	.32			
	18-24	.17	.32			
	24-33	.17	.32			
	33-60	.17	.32			



# Soil Survey of Delaware Water Gap National Recreation Area

Table 16.--Erosion Properties--Continued

Map unit symbol and soil name	Depth	Erosion factors			Wind	Wind
		Kw	Kf	T	erodi- bility group	erodi- bility index
	<i>In</i>					
298050						
Swartswood, extremely stony-----	33-60	.17	.32			
	0-1	---	---	3	5	56
	1-2	.24	.24			
	2-3	.37	.37			
	3-4	.24	.37			
	4-21	.17	.37			
	21-32	.15	.28			
	32-60	.15	.28			
298051						
Wurtsboro, extremely stony-----	0-2	---	---	3	3	86
	2-3	.20	.20			
	3-4	.32	.32			
	4-6	.32	.32			
	6-18	.32	.32			
	18-24	.17	.32			
	24-33	.17	.32			
	33-60	.17	.32			
Swartswood, extremely stony-----	0-1	---	---	3	5	56
	1-2	.24	.24			
	2-3	.37	.37			
	3-4	.24	.37			
	4-21	.17	.37			
	21-32	.15	.28			
	32-60	.15	.28			
298075						
Colonie-----	0-2	.43	.43	2	2	134
	2-11	.43	.43			
	11-24	.10	.10			
	24-40	.10	.10			
	40-62	.10	.10			
298188						
Lackawanna, extremely stony-----	0-2	---	---	3	5	56
	2-3	.20	.32			
	3-7	.28	.49			
	7-8	.24	.43			
	8-16	.32	.55			
	16-24	.32	.55			
	24-29	.28	.55			
	29-60	.20	.55			
298189						
Lackawanna, extremely stony-----	0-2	---	---	3	5	56
	2-3	.20	.32			
	3-7	.28	.49			
	7-8	.24	.43			
	8-16	.32	.55			
	16-24	.32	.55			
	24-29	.28	.55			
	29-60	.20	.55			

# Soil Survey of Delaware Water Gap National Recreation Area

Table 16.--Erosion Properties--Continued

Map unit symbol and soil name	Depth	Erosion factors			Wind	Wind
		Kw	Kf	T	erodi- bility group	erodi- bility index
	<i>In</i>					
298221 Swartswood, extremely stony-----	0-1	---	---	3	5	56
	1-2	.24	.24			
	2-3	.37	.37			
	3-4	.24	.37			
	4-21	.17	.37			
	21-32	.15	.28			
	32-60	.15	.28			
298222 Swartswood, extremely stony-----	0-1	---	---	3	5	56
	1-2	.24	.24			
	2-3	.37	.37			
	3-4	.24	.37			
	4-21	.17	.37			
	21-32	.15	.28			
	32-60	.15	.28			
298223 Swartswood, extremely stony-----	0-1	---	---	3	5	56
	1-2	.24	.24			
	2-3	.37	.37			
	3-4	.24	.37			
	4-21	.17	.37			
	21-32	.15	.28			
	32-60	.15	.28			
298255 Delaware, rarely flooded-----	0-1	---	---	5	3	86
	1-4	.28	.28			
	4-11	.24	.24			
	11-20	.43	.43			
	20-33	.49	.49			
	33-41	.43	.43			
	41-56	.43	.43			
	56-60	.55	.55			
298256 Delaware, rarely flooded-----	0-1	---	---	5	3	86
	1-4	.28	.28			
	4-11	.24	.24			
	11-20	.43	.43			
	20-33	.49	.49			
	33-41	.43	.43			
	41-56	.43	.43			
	56-60	.55	.55			
298257 Wallpack-----	0-3	.43	.43	3	5	56
	3-9	.32	.49			
	9-16	.32	.55			
	16-25	.28	.49			
	25-65	.20	.49			

# Soil Survey of Delaware Water Gap National Recreation Area

Table 16.--Erosion Properties--Continued

Map unit symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
	<i>In</i>					
298258						
Wallpack-----	0-3	.43	.43	3	5	56
	3-9	.32	.49			
	9-16	.32	.55			
	16-25	.28	.49			
	25-65	.20	.49			
298259						
Wallpack, extremely stony-----	0-1	---	---	3	6	48
	1-2	.24	.37			
	2-5	.37	.49			
	5-18	.37	.55			
	18-24	.24	.49			
	24-42	.32	.49			
	42-60	.32	.49			
298260						
Wallpack, extremely stony-----	0-1	---	---	3	6	48
	1-2	.24	.37			
	2-5	.37	.49			
	5-18	.37	.55			
	18-24	.24	.49			
	24-42	.32	.49			
	42-60	.32	.49			
298261						
Wallpack-----	0-3	.43	.43	3	5	56
	3-9	.32	.49			
	9-16	.32	.55			
	16-25	.28	.49			
	25-65	.20	.49			
298262						
Wallpack, extremely stony-----	0-1	---	---	3	6	48
	1-2	.24	.37			
	2-5	.37	.49			
	5-18	.37	.55			
	18-24	.24	.49			
	24-42	.32	.49			
	42-60	.32	.49			
298265						
Venango, extremely stony-----	0-1	---	---	3	6	48
	1-6	.37	.37			
	6-16	.49	.49			
	16-22	.32	.43			
	22-34	.32	.43			
	34-60	.24	.43			
298266						
Venango, extremely stony-----	0-1	---	---	3	6	48
	1-6	.37	.37			
	6-16	.49	.49			
	16-22	.32	.43			
	22-34	.32	.43			
	34-60	.24	.43			

# Soil Survey of Delaware Water Gap National Recreation Area

Table 16.--Erosion Properties--Continued

Map unit symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
	<i>In</i>					
298409 Swartswood, extremely stony-----	0-1	---	---	3	5	56
	1-2	.24	.24			
	2-3	.37	.37			
	3-4	.24	.37			
	4-21	.17	.37			
	21-32	.15	.28			
	32-60	.15	.28			
298411 Swartswood, extremely stony-----	0-1	---	---	3	5	56
	1-2	.24	.24			
	2-3	.37	.37			
	3-4	.24	.37			
	4-21	.17	.37			
	21-32	.15	.28			
	32-60	.15	.28			
298413 Swartswood, extremely stony-----	0-1	---	---	3	5	56
	1-2	.24	.24			
	2-3	.37	.37			
	3-4	.24	.37			
	4-21	.17	.37			
	21-32	.15	.28			
	32-60	.15	.28			
318498 Hazen, very stony-----	0-1	---	---	2	5	56
	1-10	.24	.24			
	10-18	.24	.24			
	18-29	.02	.10			
	29-41	.02	.05			
	41-60	.02	.05			
Hoosic, very stony-----	0-1	---	---	3	6	48
	1-9	.10	.24			
	9-21	.05	.20			
	21-27	.02	.10			
	27-37	.02	.05			
	37-49	.02	.05			
	49-60	.02	.05			
318533 Hazen, very stony-----	0-1	---	---	2	5	56
	1-10	.24	.24			
	10-18	.24	.24			
	18-29	.02	.10			
	29-41	.02	.05			
	41-60	.02	.05			
Hoosic, very stony-----	0-1	---	---	3	6	48
	1-9	.10	.24			
	9-21	.05	.20			
	21-27	.02	.10			
	27-37	.02	.05			
	37-49	.02	.05			
	49-60	.02	.05			

# Soil Survey of Delaware Water Gap National Recreation Area

Table 16.--Erosion Properties--Continued

Map unit symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
	<i>In</i>					
319783						
Catden-----	0-2	---	---	2	5	56
	2-13	---	---			
	13-20	---	---			
	20-32	---	---			
	32-60	---	---			
319784						
Fredon, very stony----	0-1	---	---	3	5	56
	1-8	.32	.32			
	8-14	.55	.55			
	14-18	.37	.37			
	18-23	.37	.37			
	23-31	.02	.10			
	31-36	.02	.05			
	36-45	.02	.05			
	45-55	.02	.05			
	55-60	.02	.05			
Halsey, very stony----	0-1	---	---	3	5	56
	1-5	.32	.32			
	5-11	.32	.32			
	11-20	.55	.55			
	20-25	.20	.20			
	25-35	.02	.05			
	35-49	.02	.05			
	49-56	.02	.05			
	56-60	.02	.05			
543222						
Andover, extremely stony-----	0-8	.17	.28	3	8	0
	8-17	.17	.20			
	17-53	.17	.20			
	53-65	.17	.20			
Buchanan, extremely stony-----	0-6	.24	.32	4	8	0
	6-23	.24	.28			
	23-47	.17	.24			
	47-61	.17	.24			
543243						
Berks-----	0-10	.17	.32	3	6	48
	10-26	.17	.24			
	26-33	.17	.24			
	33-43	---	---			
Weikert-----	0-8	.20	.32	2	6	48
	8-15	.20	.32			
	15-18	.20	.32			
	18-20	.20	.28			
543246						
Buchanan-----	0-7	.24	.32	4	6	48
	7-21	.24	.28			
	21-65	.17	.24			
543247						
Buchanan, extremely stony-----	0-3	.24	.32	4	8	0
	3-21	.24	.28			
	21-65	.17	.24			

# Soil Survey of Delaware Water Gap National Recreation Area

Table 16.--Erosion Properties--Continued

Map unit symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
	<i>In</i>					
543257						
Chippewa-----	0-8	.28	.28	2	8	0
	8-16	.32	.37			
	16-48	.24	.28			
	48-80	.24	.32			
543258						
Chippewa-----	0-8	.28	.28	2	8	0
	8-16	.32	.37			
	16-48	.24	.28			
	48-80	.24	.32			
543259						
Chippewa, extremely stony-----	0-8	.20	.32	2	8	0
	8-16	.28	.32			
	16-48	.24	.32			
	48-80	.24	.32			
543271						
Delaware-----	0-10	.28	.28	5	3	86
	10-40	.28	.28			
	40-87	.28	.28			
543276						
Fluvaquents-----	0-6	.32	.37	5	5	56
	6-62	.20	.32			
543292						
Hazleton, extremely stony-----	0-6	.24	.32	3	8	0
	6-43	.24	.32			
	43-55	.24	.20			
	55-80	---	---			
543293						
Hazleton, extremely stony-----	0-6	.24	.32	3	8	0
	6-43	.24	.32			
	43-60	.24	.20			
	60-80	---	---			
543299						
Laidig, extremely stony	0-3	.24	.32	4	5	56
	3-38	.24	.28			
	38-62	.17	.20			
543300						
Laidig, extremely stony	0-3	.24	.32	4	5	56
	3-38	.24	.28			
	38-62	.17	.20			
543304						
Laidig-----	0-3	.24	.32	4	5	56
	3-38	.24	.28			
	38-62	.17	.20			
Rubble land-----	0-60	---	---	---	8	0
543318						
Rubble land-----	0-60	.02	.24	5	8	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 16.--Erosion Properties--Continued

Map unit symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
	<i>In</i>					
543327						
Swartswood-----	0-11	.20	.28	4	6	48
	11-34	.20	.24			
	34-47	.20	.28			
543328						
Swartswood-----	0-11	.20	.28	4	6	48
	11-34	.20	.24			
	34-47	.20	.28			
543330						
Swartswood, extremely stony-----	0-11	.17	.28	4	8	0
	11-34	.20	.24			
	34-47	.20	.28			
Wurtsboro, extremely stony-----	34-47	.20	.28			
	0-10	.24	.32	4	8	0
	10-20	.28	.32			
	20-64	.28	.32			
543331						
Swartswood, extremely stony-----	0-11	.17	.28	4	8	0
	11-34	.20	.24			
	34-47	.20	.28			
Wurtsboro, extremely stony-----	11-34	.20	.24			
	0-10	.24	.32	4	8	0
	10-20	.28	.32			
	20-64	.28	.32			
543359						
Volusia-----	0-8	.24	.37	2	5	56
	8-15	.24	.28			
	15-70	.24	.28			
	70-80	.24	.32			
543360						
Volusia, extremely stony-----	0-8	.24	.37	2	8	0
	8-15	.24	.28			
	15-70	.24	.28			
	70-80	.24	.32			
Wurtsboro-----	0-10	.28	.32	4	6	48
	10-20	.28	.32			
	20-64	.28	.32			
543375						
Wurtsboro-----	0-10	.28	.32	4	6	48
	10-20	.28	.32			
	20-64	.28	.32			
612280						
Scio-----	0-6	.37	.37	5	5	56
	6-13	.37	.37			
	13-23	.55	.55			
	23-28	.55	.55			
	28-50	.55	.55			
	50-59	.55	.55			
	59-72	.55	.55			

# Soil Survey of Delaware Water Gap National Recreation Area

Table 16.--Erosion Properties--Continued

Map unit symbol and soil name	Depth	Erosion factors			Wind	Wind
		Kw	Kf	T	erodi- bility group	erodi- bility index
	<i>In</i>					
612666 Colonie-----	0-2	.43	.43	2	2	134
	2-11	.43	.43			
	11-24	.10	.10			
	24-40	.10	.10			
	40-62	.10	.10			
612668 Hoosic, very stony-----	0-1	---	---	3	6	48
	1-9	.10	.24			
	9-21	.05	.20			
	21-27	.02	.10			
	27-37	.02	.05			
	37-49	.02	.05			
	49-60	.02	.05			
Hazen, very stony-----	0-1	---	---	2	5	56
	1-10	.24	.24			
	10-18	.24	.24			
	18-29	.02	.10			
	29-41	.02	.05			
	41-60	.02	.05			
612724 Lordstown, very rocky--	0-1	---	---	2	5	56
	1-2	.24	.24			
	2-3	.37	.37			
	3-5	.37	.37			
	5-17	.24	.37			
	17-22	.24	.49			
	22-36	.15	.43			
	36-80	---	---			
Wallpack, very rocky---	0-1	---	---	3	6	48
	1-2	.24	.37			
	2-5	.37	.49			
	5-18	.37	.55			
	18-24	.24	.49			
	24-42	.32	.49			
	42-60	.32	.49			
612732 Atherton, very poorly drained-----	0-2	---	---	5	6	48
	2-4	---	---			
	4-8	.24	.24			
	8-10	.37	.37			
	10-18	.43	.43			
	18-29	.43	.43			
	29-32	.43	.43			
	32-41	.43	.43			
	41-45	.32	.32			
	45-50	.37	.37			
	50-60	.32	.32			
	60-70	.32	.32			
Atherton, poorly drained-----	0-6	.32	.32	5	6	48
	6-12	.49	.49			
	12-30	.49	.49			
	30-40	.43	.43			
	40-60	.43	.43			



# Soil Survey of Delaware Water Gap National Recreation Area

Table 16.--Erosion Properties--Continued

Map unit symbol and soil name	Depth	Erosion factors			Wind	Wind
		Kw	Kf	T	erodi- bility group	erodi- bility index
	<i>In</i>					
612738 Fluvaquents, occasionally flooded--	0-5	.37	.37	5	5	56
	5-12	.43	.43			
	12-18	.20	.20			
	18-24	.20	.20			
	24-60	.32	.32			
612753 Wallpack, aeolian mantle, very stony----	0-1	---	---	5	3	86
	1-2	.32	.32			
	2-8	.28	.28			
	8-14	.43	.43			
	14-21	.49	.49			
	21-26	.32	.49			
	26-31	.15	.43			
	31-36	.17	.43			
	36-60	.28	.43			
612756 Wallpack, aeolian mantle, very stony----	0-1	---	---	5	3	86
	1-2	.32	.32			
	2-8	.28	.28			
	8-14	.43	.43			
	14-21	.49	.49			
	21-26	.32	.49			
	26-31	.15	.43			
	31-36	.17	.43			
	36-60	.28	.43			
612757 Wallpack, aeolian mantle, very stony----	0-1	---	---	5	3	86
	1-2	.32	.32			
	2-8	.28	.28			
	8-14	.43	.43			
	14-21	.49	.49			
	21-26	.32	.49			
	26-31	.15	.43			
	31-36	.17	.43			
	36-60	.28	.43			
612767 Wellsboro, extremely stony-----	0-8	.37	.37	3	5	56
	8-15	.32	.55			
	15-24	.32	.55			
	24-29	.28	.55			
	29-37	.15	.32			
	37-60	.15	.32			
612768 Wellsboro, extremely stony-----	0-8	.37	.37	3	5	56
	8-15	.32	.55			
	15-24	.32	.55			
	24-29	.28	.55			
	29-37	.15	.32			
	37-60	.15	.32			

# Soil Survey of Delaware Water Gap National Recreation Area

Table 16.--Erosion Properties--Continued

Map unit symbol and soil name	Depth	Erosion factors			Wind	Wind
		Kw	Kf	T	erodi- bility group	erodi- bility index
	<i>In</i>					
613393						
Alden, extremely stony-	0-2	---	---	3	6	48
	2-7	.28	.28			
	7-14	.49	.49			
	14-28	.43	.43			
	28-43	.43	.43			
	43-60	.49	.49			
613447						
Unadilla-----	0-8	.32	.32	5	5	56
	8-14	.43	.43			
	14-25	.55	.55			
	25-39	.55	.55			
	39-60	.64	.64			
613448						
Unadilla-----	0-8	.32	.32	5	5	56
	8-14	.43	.43			
	14-25	.55	.55			
	25-39	.55	.55			
	39-60	.64	.64			
614075						
Wurtsboro, extremely stony-----	0-2	---	---	3	3	86
	2-3	.20	.20			
	3-4	.32	.32			
	4-6	.32	.32			
	6-18	.32	.32			
	18-24	.17	.32			
	24-33	.17	.32			
	33-60	.17	.32			
Swartswood, extremely stony-----	0-1	---	---	3	5	56
	1-2	.24	.24			
	2-3	.37	.37			
	3-4	.24	.37			
	4-21	.17	.37			
	21-32	.15	.28			
	32-60	.15	.28			
620179						
Arnot, very rocky-----	0-1	---	---	1	5	56
	1-2	.32	.32			
	2-3	.43	.43			
	3-4	.43	.43			
	4-12	.17	.49			
	12-17	.10	.49			
	17-80	---	---			
Lordstown, very rocky--	0-1	---	---	2	5	56
	1-2	.24	.24			
	2-3	.37	.37			
	3-5	.37	.37			
	5-17	.24	.37			
	17-22	.24	.49			
	22-36	.15	.43			
	36-80	---	---			

# Soil Survey of Delaware Water Gap National Recreation Area

Table 16.--Erosion Properties--Continued

Map unit symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
	<i>In</i>					
620180						
Arnot-----	0-1	---	---	1	5	56
	1-2	.32	.32			
	2-3	.43	.43			
	3-4	.43	.43			
	4-12	.17	.49			
	12-17	.10	.49			
	17-80	---	---			
Lordstown-----	0-1	---	---	2	5	56
	1-2	.24	.24			
	2-3	.37	.37			
	3-5	.37	.37			
	5-17	.24	.37			
	17-22	.24	.49			
	22-36	.15	.43			
	36-80	---	---			
Rock outcrop.						
620181						
Arnot-----	0-1	---	---	1	5	56
	1-2	.32	.32			
	2-3	.43	.43			
	3-4	.43	.43			
	4-12	.17	.49			
	12-17	.10	.49			
	17-80	---	---			
Lordstown-----	0-1	---	---	2	5	56
	1-2	.24	.24			
	2-3	.37	.37			
	3-5	.37	.37			
	5-17	.24	.37			
	17-22	.24	.49			
	22-36	.15	.43			
	36-80	---	---			
Rock outcrop.						
623089						
Chippewa, extremely stony-----	0-2	---	---	3	6	48
	2-4	.37	.37			
	4-8	.43	.43			
	8-13	.49	.49			
	13-21	.49	.49			
	21-29	.49	.49			
	29-34	.49	.49			
	34-60	.43	.43			
623109						
Farmington-----	0-1	---	---	1	5	56
	1-3	.43	.43			
	3-9	.64	.64			
	9-15	.64	.64			
	15-80	---	---			
Rock outcrop.						

# Soil Survey of Delaware Water Gap National Recreation Area

Table 16.--Erosion Properties--Continued

Map unit symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
	<i>In</i>					
624811						
Galway, very rocky----	0-2	---	---	2	5	56
	2-3	---	---			
	3-5	.24	.24			
	5-15	.32	.49			
	15-24	.24	.49			
	24-80	---	---			
624813						
Lackawanna, extremely stony-----	0-2	---	---	3	5	56
	2-3	.20	.32			
	3-7	.28	.49			
	7-8	.24	.43			
	8-16	.32	.55			
	16-24	.32	.55			
	24-29	.28	.55			
	29-60	.20	.55			
624816						
Lordstown, very rocky--	0-1	---	---	2	5	56
	1-2	.24	.24			
	2-3	.37	.37			
	3-5	.37	.37			
	5-17	.24	.37			
	17-22	.24	.49			
	22-36	.15	.43			
	36-80	---	---			
Wallpack, very rocky---	0-1	---	---	3	6	48
	1-2	.24	.37			
	2-5	.37	.49			
	5-18	.37	.55			
	18-24	.24	.49			
	24-42	.32	.49			
	42-60	.32	.49			
624822						
Lordstown-----	0-1	---	---	2	5	56
	1-2	.24	.24			
	2-3	.37	.37			
	3-5	.37	.37			
	5-17	.24	.37			
	17-22	.24	.49			
	22-36	.15	.43			
	36-80	---	---			
Wallpack-----	0-3	.43	.43	3	5	56
	3-9	.32	.49			
	9-16	.32	.55			
	16-25	.28	.49			
	25-65	.20	.49			
624823						
Lordstown-----	0-1	---	---	2	5	56
	1-2	.24	.24			
	2-3	.37	.37			
	3-5	.37	.37			
	5-17	.24	.37			
	17-22	.24	.49			
	22-36	.15	.43			
	36-80	---	---			

# Soil Survey of Delaware Water Gap National Recreation Area

Table 16.--Erosion Properties--Continued

Map unit symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
	<i>In</i>					
624823						
Wallpack-----	0-3	.43	.43	3	5	56
	3-9	.32	.49			
	9-16	.32	.55			
	16-25	.28	.49			
	25-65	.20	.49			
624824						
Lordstown-----	0-1	---	---	2	5	56
	1-2	.24	.24			
	2-3	.37	.37			
	3-5	.37	.37			
	5-17	.24	.37			
	17-22	.24	.49			
	22-36	.15	.43			
	36-80	---	---			
Wallpack-----	0-3	.43	.43	3	5	56
	3-9	.32	.49			
	9-16	.32	.55			
	16-25	.28	.49			
	25-65	.20	.49			
624826						
Manlius, very rocky----	0-1	---	---	2	7	38
	1-2	.10	.32			
	2-18	.10	.55			
	18-27	.10	.64			
	27-80	---	---			
Nassau, very rocky----	0-1	---	---	1	7	38
	1-2	.17	.43			
	2-15	.10	.64			
	15-80	---	---			
624827						
Nassau, very rocky----	0-7	.17	.43	1	7	38
	7-13	.10	.64			
	13-80	---	---			
Manlius, very rocky----	0-9	.10	.32	2	7	38
	9-20	.10	.55			
	20-29	.10	.64			
	29-80	---	---			
624828						
Nassau, very rocky----	0-7	.17	.43	1	7	38
	7-13	.10	.64			
	13-80	---	---			
Manlius, very rocky----	0-9	.10	.32	2	7	38
	9-20	.10	.55			
	20-29	.10	.64			
	29-80	---	---			
624829						
Nassau, very rocky----	0-7	.17	.43	1	7	38
	7-13	.10	.64			
	13-80	---	---			

# Soil Survey of Delaware Water Gap National Recreation Area

Table 16.--Erosion Properties--Continued

Map unit symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
	<i>In</i>					
624829						
Manlius, very rocky----	0-9	.10	.32	2	7	38
	9-20	.10	.55			
	20-29	.10	.64			
	29-80	---	---			
624832						
Nassau-----	0-1	---	---	1	7	38
	1-2	.17	.43			
	2-15	.10	.64			
	15-80	---	---			
Rock outcrop.						
624841						
Oquaga-----	0-1	---	---	2	6	48
	1-4	.20	.28			
	4-20	.20	.49			
	20-25	.10	.55			
	25-80	---	---			
Rock outcrop.						
624845						
Rock outcrop.						
Farmington-----	0-1	---	---	1	5	56
	1-3	.43	.43			
	3-9	.64	.64			
	9-15	.64	.64			
	15-80	---	---			
Galway-----	0-2	---	---	2	5	56
	2-3	---	---			
	3-5	.24	.24			
	5-15	.32	.49			
	15-24	.24	.49			
	24-80	---	---			
624846						
Rock outcrop.						
Arnot-----	0-1	---	---	1	5	56
	1-2	.32	.32			
	2-3	.43	.43			
	3-4	.43	.43			
	4-12	.17	.49			
	12-17	.10	.49			
	17-80	---	---			
Rubble land-----	0-60	---	---	---	---	---
626816						
Udifluvents, occasionally flooded--	0-3	.05	.05	5	2	134
	3-16	.17	.17			
	16-22	.28	.28			
	22-27	.28	.28			
	27-32	.28	.28			
	32-60	.15	.15			

# Soil Survey of Delaware Water Gap National Recreation Area

Table 16.--Erosion Properties--Continued

Map unit symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
	<i>In</i>					
635458						
Oquaga, very rocky-----	0-1	---	---	2	6	48
	1-4	.20	.28			
	4-20	.20	.49			
	20-25	.10	.55			
	25-80	---	---			
Lackawanna, very rocky-	0-2	---	---	3	5	56
	2-3	.20	.32			
	3-7	.28	.49			
	7-8	.24	.43			
	8-16	.32	.55			
	16-24	.32	.55			
	24-29	.28	.55			
	29-60	.20	.55			
635459						
Oquaga, very rocky-----	0-1	---	---	2	6	48
	1-4	.20	.28			
	4-20	.20	.49			
	20-25	.10	.55			
	25-80	---	---			
Lackawanna, very rocky-	0-2	---	---	3	5	56
	2-3	.20	.32			
	3-7	.28	.49			
	7-8	.24	.43			
	8-16	.32	.55			
	16-24	.32	.55			
	24-29	.28	.55			
	29-60	.20	.55			
740953						
Delaware, rarely flooded-----	0-1	---	---	5	3	86
	1-4	.28	.28			
	4-11	.24	.24			
	11-20	.43	.43			
	20-33	.49	.49			
	33-41	.43	.43			
	41-56	.43	.43			
	56-60	.55	.55			
740968						
Nassau, very rocky-----	0-7	.17	.43	1	7	38
	7-13	.10	.64			
	13-80	---	---			
Manlius, very rocky----	0-9	.10	.32	2	7	38
	9-20	.10	.55			
	20-29	.10	.64			
	29-80	---	---			
740969						
Nassau, very rocky-----	0-7	.17	.43	1	7	38
	7-13	.10	.64			
	13-80	---	---			
Manlius, very rocky----	0-9	.10	.32	2	7	38
	9-20	.10	.55			
	20-29	.10	.64			
	29-80	---	---			

# Soil Survey of Delaware Water Gap National Recreation Area

Table 16.--Erosion Properties--Continued

Map unit symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
	<i>In</i>					
740971						
Oquaga, very rocky-----	0-1	---	---	2	6	48
	1-4	.20	.28			
	4-20	.20	.49			
	20-25	.10	.55			
	25-80	---	---			
Lackawanna, very rocky-	0-2	---	---	3	5	56
	2-3	.20	.32			
	3-7	.28	.49			
	7-8	.24	.43			
	8-16	.32	.55			
	16-24	.32	.55			
	24-29	.28	.55			
	29-60	.20	.55			
740972						
Oquaga, very rocky-----	0-1	---	---	2	6	48
	1-4	.20	.28			
	4-20	.20	.49			
	20-25	.10	.55			
	25-80	---	---			
Lackawanna, very rocky-	0-2	---	---	3	5	56
	2-3	.20	.32			
	3-7	.28	.49			
	7-8	.24	.43			
	8-16	.32	.55			
	16-24	.32	.55			
	24-29	.28	.55			
	29-60	.20	.55			
740974						
Oquaga-----	0-1	---	---	2	6	48
	1-4	.20	.28			
	4-20	.20	.49			
	20-25	.10	.55			
	25-80	---	---			
Rock outcrop.						
740975						
Rock outcrop-----	0-80	---	---	---	---	---
Arnot-----	0-1	---	---	1	5	56
	1-2	.32	.32			
	2-3	.43	.43			
	3-4	.43	.43			
	4-12	.17	.49			
	12-17	.10	.49			
	17-80	---	---			
Rubble land-----	0-60	---	---	---	---	---
740987						
Scio-----	0-6	.37	.37	5	5	56
	6-13	.37	.37			
	13-23	.55	.55			
	23-28	.55	.55			
	28-50	.55	.55			
	50-59	.55	.55			
	59-72	.55	.55			



# Soil Survey of Delaware Water Gap National Recreation Area

Table 16.--Erosion Properties--Continued

Map unit symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
	<i>In</i>					
740988 Udifluvents, occasionally flooded--	0-3	.05	.05	5	2	134
	3-16	.17	.17			
	16-22	.28	.28			
	22-27	.28	.28			
	27-32	.28	.28			
	32-60	.15	.15			
740991 Unadilla-----	0-8	.32	.32	5	5	56
	8-14	.43	.43			
	14-25	.55	.55			
	25-39	.55	.55			
	39-60	.64	.64			
740992 Unadilla-----	0-8	.32	.32	5	5	56
	8-14	.43	.43			
	14-25	.55	.55			
	25-39	.55	.55			
	39-60	.64	.64			
740995 Wellsboro, extremely stony-----	0-8	.37	.37	3	5	56
	8-15	.32	.55			
	15-24	.32	.55			
	24-29	.28	.55			
	29-37	.15	.32			
	37-60	.15	.32			
740996 Wellsboro, extremely stony-----	0-8	.37	.37	3	5	56
	8-15	.32	.55			
	15-24	.32	.55			
	24-29	.28	.55			
	29-37	.15	.32			
	37-60	.15	.32			
741149 Lackawanna, extremely stony-----	0-2	---	---	3	5	56
	2-3	.20	.32			
	3-7	.28	.49			
	7-8	.24	.43			
	8-16	.32	.55			
	16-24	.32	.55			
	24-29	.28	.55			
	29-60	.20	.55			
741150 Lackawanna, extremely stony-----	0-2	---	---	3	5	56
	2-3	.20	.32			
	3-7	.28	.49			
	7-8	.24	.43			
	8-16	.32	.55			
	16-24	.32	.55			
	24-29	.28	.55			
	29-60	.20	.55			

# Soil Survey of Delaware Water Gap National Recreation Area

Table 16.--Erosion Properties--Continued

Map unit symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
	<i>In</i>					
801114						
Oquaga-----	0-1	---	---	2	6	48
	1-4	.20	.28			
	4-20	.20	.49			
	20-25	.10	.55			
	25-80	---	---			
Rock outcrop.						
810906						
Oquaga-----	0-1	---	---	2	6	48
	1-4	.20	.28			
	4-20	.20	.49			
	20-25	.10	.55			
	25-80	---	---			
Rock outcrop.						
1147465						
Alden, extremely stony-	0-2	---	---	3	6	48
	2-7	.28	.28			
	7-14	.49	.49			
	14-28	.43	.43			
	28-43	.43	.43			
	43-60	.49	.49			
1147467						
Arnot, very rocky-----	0-1	---	---	1	5	56
	1-2	.32	.32			
	2-3	.43	.43			
	3-4	.43	.43			
	4-12	.17	.49			
	12-17	.10	.49			
	17-80	---	---			
Lordstown, very rocky--	0-1	---	---	2	5	56
	1-2	.24	.24			
	2-3	.37	.37			
	3-5	.37	.37			
	5-17	.24	.37			
	17-22	.24	.49			
	22-36	.15	.43			
	36-80	---	---			
1147468						
Arnot-----	0-1	---	---	1	5	56
	1-2	.32	.32			
	2-3	.43	.43			
	3-4	.43	.43			
	4-12	.17	.49			
	12-17	.10	.49			
	17-80	---	---			
Lordstown-----	0-1	---	---	2	5	56
	1-2	.24	.24			
	2-3	.37	.37			
	3-5	.37	.37			
	5-17	.24	.37			
	17-22	.24	.49			
	22-36	.15	.43			
	36-80	---	---			
Rock outcrop.						

# Soil Survey of Delaware Water Gap National Recreation Area

Table 16.--Erosion Properties--Continued

Map unit symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
	<i>In</i>					
1147469						
Arnot-----	0-1	---	---	1	5	56
	1-2	.32	.32			
	2-3	.43	.43			
	3-4	.43	.43			
	4-12	.17	.49			
	12-17	.10	.49			
	17-80	---	---			
Lordstown-----	0-1	---	---	2	5	56
	1-2	.24	.24			
	2-3	.37	.37			
	3-5	.37	.37			
	5-17	.24	.37			
	17-22	.24	.49			
	22-36	.15	.43			
	36-80	---	---			
Rock outcrop.						
1147470						
Atherton, very poorly drained-----	0-2	---	---	5	6	48
	2-4	---	---			
	4-8	.24	.24			
	8-10	.37	.37			
	10-18	.43	.43			
	18-29	.43	.43			
	29-32	.43	.43			
	32-41	.43	.43			
	41-45	.32	.32			
	45-50	.37	.37			
	50-60	.32	.32			
	60-70	.32	.32			
Atherton, poorly drained-----	0-6	.32	.32	5	6	48
	6-12	.49	.49			
	12-30	.49	.49			
	30-40	.43	.43			
	40-60	.43	.43			
1147471						
Catden-----	0-2	---	---	2	5	56
	2-13	---	---			
	13-20	---	---			
	20-32	---	---			
	32-60	---	---			
1147474						
Chippewa, extremely stony-----	0-2	---	---	3	6	48
	2-4	.37	.37			
	4-8	.43	.43			
	8-13	.49	.49			
	13-21	.49	.49			
	21-29	.49	.49			
	29-34	.49	.49			
	34-60	.43	.43			

# Soil Survey of Delaware Water Gap National Recreation Area

Table 16.--Erosion Properties--Continued

Map unit symbol and soil name	Depth	Erosion factors			Wind	Wind
		Kw	Kf	T	erodi- bility group	erodi- bility index
	<i>In</i>					
1147475						
Colonie-----	0-2	.43	.43	2	2	134
	2-11	.43	.43			
	11-24	.10	.10			
	24-40	.10	.10			
	40-62	.10	.10			
1147478						
Delaware, rarely flooded-----	0-1	---	---	5	3	86
	1-4	.28	.28			
	4-11	.24	.24			
	11-20	.43	.43			
	20-33	.49	.49			
	33-41	.43	.43			
	41-56	.43	.43			
	56-60	.55	.55			
1147482						
Fredon, very stony-----	0-1	---	---	3	5	56
	1-8	.32	.32			
	8-14	.55	.55			
	14-18	.37	.37			
	18-23	.37	.37			
	23-31	.02	.10			
	31-36	.02	.05			
	36-45	.02	.05			
	45-55	.02	.05			
	55-60	.02	.05			
Halsey, very stony-----	0-1	---	---	3	5	56
	1-5	.32	.32			
	5-11	.32	.32			
	11-20	.55	.55			
	20-25	.20	.20			
	25-35	.02	.05			
	35-49	.02	.05			
	49-56	.02	.05			
	56-60	.02	.05			
1147485						
Hazen, very stony-----	0-1	---	---	2	5	56
	1-10	.24	.24			
	10-18	.24	.24			
	18-29	.02	.10			
	29-41	.02	.05			
	41-60	.02	.05			
Hoosic, very stony-----	0-1	---	---	3	6	48
	1-9	.10	.24			
	9-21	.05	.20			
	21-27	.02	.10			
	27-37	.02	.05			
	37-49	.02	.05			
	49-60	.02	.05			

# Soil Survey of Delaware Water Gap National Recreation Area

Table 16.--Erosion Properties--Continued

Map unit symbol and soil name	Depth	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
		Kw	Kf	T		
	<i>In</i>					
1147490						
Hoosic, very stony-----	0-1	---	---	3	6	48
	1-9	.10	.24			
	9-21	.05	.20			
	21-27	.02	.10			
	27-37	.02	.05			
	37-49	.02	.05			
	49-60	.02	.05			
Hazen, very stony-----	0-1	---	---	2	5	56
	1-10	.24	.24			
	10-18	.24	.24			
	18-29	.02	.10			
	29-41	.02	.05			
	41-60	.02	.05			
1147491						
Hoosic, very stony-----	0-1	---	---	3	6	48
	1-9	.10	.24			
	9-21	.05	.20			
	21-27	.02	.10			
	27-37	.02	.05			
	37-49	.02	.05			
	49-60	.02	.05			
Otisville, very stony--	0-1	---	---	5	5	56
	1-2	.05	.10			
	2-7	.05	.20			
	7-11	.05	.10			
	11-19	.05	.10			
	19-31	.02	.05			
	31-43	.02	.05			
	43-60	.05	.05			
1147492						
Lackawanna, extremely stony-----	0-2	---	---	3	5	56
	2-3	.20	.32			
	3-7	.28	.49			
	7-8	.24	.43			
	8-16	.32	.55			
	16-24	.32	.55			
	24-29	.28	.55			
	29-60	.20	.55			
1147500						
Wurtsboro, extremely stony-----	0-2	---	---	3	5	56
	2-3	.24	.24			
	3-5	.32	.32			
	5-6	.37	.37			
	6-18	.32	.32			
	18-24	.17	.32			
	24-30	.17	.32			
	30-60	.17	.32			

# Soil Survey of Delaware Water Gap National Recreation Area

Table 16.--Erosion Properties--Continued

Map unit symbol and soil name	Depth	Erosion factors			Wind	Wind
		Kw	Kf	T	erodi- bility group	erodi- bility index
	<i>In</i>					
1147501						
Wurtsboro, extremely stony-----	0-2	---	---	3	3	86
	2-3	.20	.20			
	3-4	.32	.32			
	4-6	.32	.32			
	6-18	.32	.32			
	18-24	.17	.32			
	24-33	.17	.32			
	33-60	.17	.32			
Swartswood, extremely stony-----	0-1	---	---	3	5	56
	1-2	.24	.24			
	2-3	.37	.37			
	3-4	.24	.37			
	4-21	.17	.37			
	21-32	.15	.28			
	32-60	.15	.28			
1147502						
Wurtsboro, extremely stony-----	0-2	---	---	3	3	86
	2-3	.20	.20			
	3-4	.32	.32			
	4-6	.32	.32			
	6-18	.32	.32			
	18-24	.17	.32			
	24-33	.17	.32			
	33-60	.17	.32			
Swartswood, extremely stony-----	0-1	---	---	3	5	56
	1-2	.24	.24			
	2-3	.37	.37			
	3-4	.24	.37			
	4-21	.17	.37			
	21-32	.15	.28			
	32-60	.15	.28			
1147527						
Udorthents-----	0-12	.32	.32	5	5	56
	12-72	.20	.20			
Urban land.						
1147532						
Udorthents-----	0-12	.32	.32	5	5	56
	12-72	.20	.20			
1147533						
Wurtsboro, extremely stony-----	0-2	---	---	3	3	86
	2-3	.20	.20			
	3-4	.32	.32			
	4-6	.32	.32			
	6-18	.32	.32			
	18-24	.17	.32			
	24-33	.17	.32			
	33-60	.17	.32			

# Soil Survey of Delaware Water Gap National Recreation Area

Table 16.--Erosion Properties--Continued

Map unit symbol and soil name	Depth	Erosion factors			Wind	Wind
		Kw	Kf	T	erodi- bility group	erodi- bility index
	<i>In</i>					
1147533 Swartswood, extremely stony-----	0-1	---	---	3	5	56
	1-2	.24	.24			
	2-3	.37	.37			
	3-4	.24	.37			
	4-21	.17	.37			
	21-32	.15	.28			
	32-60	.15	.28			
1948749 Arnot-----	0-8	.24	.28	1	5	56
	8-16	.17	.24			
	16-26	---	---			
1948750 Arnot-----	0-8	.24	.28	1	5	56
	8-16	.17	.24			
	16-26	---	---			
1948751 Arnot-----	0-8	.24	.28	1	5	56
	8-16	.17	.24			
	16-26	---	---			
1948774 Conotton-----	0-9	.24	.43	4	8	0
	9-45	.24	.64			
	45-80	.10	.37			
1948775 Conotton-----	0-9	.24	.43	4	8	0
	9-45	.24	.64			
	45-80	.10	.37			
1948776 Conotton-----	0-9	.24	.43	4	8	0
	9-45	.24	.64			
	45-80	.10	.37			
1948777 Conotton-----	0-9	.24	.43	4	8	0
	9-45	.24	.64			
	45-80	.10	.37			
1948797 Manlius-----	0-8	.28	.32	2	8	0
	8-24	.20	.28			
	24-32	.20	.32			
	32-40	---	---			
1948802 Manlius-----	0-8	.28	.32	2	8	0
	8-24	.20	.28			
	24-32	.20	.32			
	32-40	---	---			
1948818 Manlius-----	0-8	.28	.32	2	8	0
	8-24	.20	.28			
	24-32	.20	.32			
	32-40	---	---			

# Soil Survey of Delaware Water Gap National Recreation Area

Table 16.--Erosion Properties--Continued

Map unit symbol and soil name	Depth	Erosion factors			Wind	Wind
		Kw	Kf	T	erodi- bility group	erodi- bility index
	<i>In</i>					
1948832						
Penargyl-----	0-12	.17	.32	5	5	56
	12-74	.15	.24			
	74-80	.28	.24			
	80-90	---	---			
1948846						
Phelps-----	0-10	.37	.37	5	5	56
	10-22	.24	.28			
	22-30	.24	.28			
	30-79	.17	.28			
1948855						
Udorthents, loamy-----	0-5	.37	.37	5	5	56
	5-40	.37	.37			
	40-70	.32	.37			
1948989						
Urban land-----	0-6	---	---	---	8	0
Delaware-----	0-10	.28	.28	5	3	86
	10-40	.28	.28			
	40-87	.28	.28			



# Soil Survey of Delaware Water Gap National Recreation Area

Table 17.--Total Soil Carbon

[This table displays soil organic carbon (SOC) and soil inorganic carbon (SIC) in kilograms per square meter to a depth of 2 meters or to the representative top depth of any kind of bedrock or any cemented soil horizon. SOC and SIC are reported on a volumetric whole-soil basis, corrected for representative rock fragments indicated in the database. SOC is converted from soil organic matter by horizon for the fraction of the soil less than 2 millimeters in diameter. If soil organic matter is indicated in the database as pwnn, SOC is assumed to be zero. SIC is converted from the content of calcium carbonate by horizon in the fraction of the soil less than 2 millimeters in diameter. If the content of calcium carbonate is indicated in the database as pwnn, SIC is assumed to be zero. A weighted average of all horizons is used in the calculations." Only major components of a map unit are displayed in this table]

Map unit symbol, component name, and component percent	SOC	SIC
	kg/m <sup>2</sup>	kg/m <sup>2</sup>
290836		
Hoosic, very stony (50 percent)-----	7	0
Otisville, very stony (40 percent)-----	4	0
296265		
Alden (100 percent)-----	33	0
296269		
Fluvents, (alluvial land) (70 percent)-----	3	0
296271		
Alvira (55 percent)-----	5	0
Watson (35 percent)-----	4	0
296272		
Bath (85 percent)-----	6	0
296273		
Bath (85 percent)-----	6	0
296274		
Bath (85 percent)-----	6	0
296275		
Bath (90 percent)-----	4	0
296276		
Bath (90 percent)-----	4	0
296277		
Benson (55 percent)-----	5	0
296278		
Benson (60 percent)-----	5	0
Rock outcrop (20 percent)-----	0	0
296279		
Benson (60 percent)-----	5	0
Rock outcrop (25 percent)-----	0	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 17.--Total Soil Carbon--Continued

Map unit symbol, component name, and component percent	SOC	SIC
	<i>kg/m<sup>2</sup></i>	<i>kg/m<sup>2</sup></i>
296280		
Braceville (90 percent)-----	3	0
296281		
Braceville (90 percent)-----	2	0
296283		
Buchanan (90 percent)-----	5	0
296288		
Chippewa (48 percent)-----	13	0
Norwich (48 percent)-----	13	0
296289		
Chippewa (47 percent)-----	11	0
Norwich (47 percent)-----	11	0
296295		
Udorthents, cut and fill (90 percent)-----	0	0
296297		
Dekalb (100 percent)-----	4	0
296298		
Dekalb (100 percent)-----	4	0
296303		
Hazleton (100 percent)-----	3	0
296304		
Holly (100 percent)-----	12	0
296311		
Lackawanna (40 percent)-----	4	0
Bath (30 percent)-----	6	0
296312		
Lackawanna (80 percent)-----	4	0
296313		
Lackawanna (80 percent)-----	4	0
296315		
Lackawanna (80 percent)-----	4	0
296316		
Lackawanna (80 percent)-----	4	0
296317		
Laidig (100 percent)-----	3	0
296326		
Lordstown (85 percent)-----	3	0
296327		
Lordstown (85 percent)-----	4	0
296328		
Lordstown (40 percent)-----	3	0
Oquaga (35 percent)-----	3	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 17.--Total Soil Carbon--Continued

Map unit symbol, component name, and component percent	SOC	SIC
	<i>kg/m<sup>2</sup></i>	<i>kg/m<sup>2</sup></i>
296329		
Mardin (85 percent)-----	6	0
296330		
Mardin (85 percent)-----	5	0
296331		
Mardin (85 percent)-----	10	0
296332		
Mardin (87 percent)-----	8	0
296335		
Meckesville (100 percent)-----	5	0
296337		
Meckesville (100 percent)-----	6	0
296338		
Morris (80 percent)-----	8	0
296339		
Morris (75 percent)-----	7	0
296340		
Morris (80 percent)-----	7	0
296341		
Freetown, mucky peat (100 percent)-----	170	0
296342		
Paupack, mucky peat (shallow) (100 percent)-----	90	0
296343		
Oquaga (50 percent)-----	3	0
Lackawanna (35 percent)-----	4	0
296344		
Oquaga (55 percent)-----	3	0
Lackawanna (30 percent)-----	4	0
296346		
Oquaga (50 percent)-----	3	0
Lackawanna (35 percent)-----	4	0
296347		
Oquaga (60 percent)-----	3	0
Lackawanna (30 percent)-----	4	0
296348		
Philo (85 percent)-----	15	0
296349		
Pope (90 percent)-----	5	0
296350		
Pope (90 percent)-----	5	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 17.--Total Soil Carbon--Continued

Map unit symbol, component name, and component percent	SOC	SIC
	kg/m <sup>2</sup>	kg/m <sup>2</sup>
296351		
Rexford, somewhat poorly drained (40 percent)----	8	0
Rexford, poorly drained (35 percent)-----	9	0
296355		
Sheffield (100 percent)-----	9	0
296363		
Dystrochrepts, very stony (85 percent)-----	3	0
296369		
Wayland (100 percent)-----	14	0
296376		
Wellsboro (80 percent)-----	6	0
296379		
Wellsboro (85 percent)-----	5	0
296385		
Wyoming (85 percent)-----	4	0
296386		
Wyoming (85 percent)-----	4	0
296387		
Wyoming (85 percent)-----	4	0
296388		
Wyoming (85 percent)-----	4	0
296389		
Wyoming (100 percent)-----	4	0
296390		
Water (100 percent)-----	0	0
297185		
Edgemere (42 percent)-----	9	0
Shohola (42 percent)-----	4	0
297186		
Edgemere (75 percent)-----	9	0
297188		
Manlius (40 percent)-----	4	0
Arnot (35 percent)-----	3	0
Rock outcrop (15 percent)-----	0	0
297189		
Manlius (40 percent)-----	6	0
Arnot (35 percent)-----	1	0
Rock outcrop (15 percent)-----	0	0
297190		
Braceville (82 percent)-----	14	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 17.--Total Soil Carbon--Continued

Map unit symbol, component name, and component percent	SOC	SIC
	<i>kg/m<sup>2</sup></i>	<i>kg/m<sup>2</sup></i>
297191 Wyalusing (85 percent)-----	6	0
297192 Pope (95 percent)-----	8	0
297193 Paupack (90 percent)-----	90	0
297196 Freetown (94 percent)-----	170	0
297197 Manlius (90 percent)-----	4	0
297198 Manlius (86 percent)-----	4	0
297201 Oquaga (75 percent)-----	5	0
297203 Delaware (93 percent)-----	11	0
297204 Delaware (82 percent)-----	11	0
297205 Delaware (80 percent)-----	11	0
297209 Philo (85 percent)-----	6	0
297210 Barbour (85 percent)-----	7	0
297216 Wurtsboro (92 percent)-----	4	0
297217 Wurtsboro (88 percent)-----	4	0
297227 Arnot (88 percent)-----	2	0
297228 Arnot (85 percent)-----	3	0
297229 Wyoming (90 percent)-----	2	0
297230 Wyoming (90 percent)-----	2	0
297231 Wyoming (90 percent)-----	2	0
297236 Suncook (91 percent)-----	7	0
297237 Mardin (85 percent)-----	9	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 17.--Total Soil Carbon--Continued

Map unit symbol, component name, and component percent	SOC	SIC
	<i>kg/m<sup>2</sup></i>	<i>kg/m<sup>2</sup></i>
297238		
Mardin (85 percent)-----	9	0
297239		
Mardin (85 percent)-----	9	0
297240		
Mardin (85 percent)-----	9	0
297241		
Unadilla (90 percent)-----	19	0
297242		
Shohola (62 percent)-----	4	0
Edgemere (29 percent)-----	9	0
297243		
Shohola (62 percent)-----	4	0
Edgemere (29 percent)-----	9	0
297244		
Lordstown (40 percent)-----	5	0
Swartswood (35 percent)-----	7	0
297247		
Chenango (86 percent)-----	8	0
297248		
Chenango (85 percent)-----	8	0
297249		
Chenango (90 percent)-----	8	0
297253		
Craigsville (50 percent)-----	3	0
Wyoming (40 percent)-----	3	0
297254		
Pits, shale (40 percent)-----	0	0
Pits, gravel (40 percent).		
298049		
Wurtsboro, extremely stony (90 percent)-----	9	0
298050		
Wurtsboro, extremely stony (60 percent)-----	9	0
Swartswood, extremely stony (40 percent)-----	7	0
298051		
Wurtsboro, extremely stony (60 percent)-----	9	0
Swartswood, extremely stony (40 percent)-----	7	0
298075		
Colonie (80 percent)-----	5	0
298188		
Lackawanna, extremely stony (85 percent)-----	10	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 17.--Total Soil Carbon--Continued

Map unit symbol, component name, and component percent	SOC	SIC
	kg/m <sup>2</sup>	kg/m <sup>2</sup>
298189 Lackawanna, extremely stony (85 percent)-----	10	0
298221 Swartswood, extremely stony (90 percent)-----	7	0
298222 Swartswood, extremely stony (90 percent)-----	7	0
298223 Swartswood, extremely stony (85 percent)-----	7	0
298255 Delaware, rarely flooded (80 percent)-----	6	0
298256 Delaware, rarely flooded (80 percent)-----	6	0
298257 Wallpack (85 percent)-----	4	0
298258 Wallpack (85 percent)-----	4	0
298259 Wallpack, extremely stony (85 percent)-----	6	0
298260 Wallpack, extremely stony (85 percent)-----	6	0
298261 Wallpack (85 percent)-----	4	0
298262 Wallpack, extremely stony (85 percent)-----	6	0
298265 Venango, extremely stony (90 percent)-----	9	0
298266 Venango, extremely stony (85 percent)-----	9	0
298409 Swartswood, extremely stony (90 percent)-----	7	0
298411 Swartswood, extremely stony (90 percent)-----	7	0
298413 Swartswood, extremely stony (85 percent)-----	7	0
318498 Hazen, very stony (60 percent)-----	10	0
Hoosic, very stony (35 percent)-----	7	0
318533 Hazen, very stony (50 percent)-----	10	0
Hoosic, very stony (40 percent)-----	4	0
319783 Catden (85 percent)-----	135	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 17.--Total Soil Carbon--Continued

Map unit symbol, component name, and component percent	SOC	SIC
	kg/m <sup>2</sup>	kg/m <sup>2</sup>
319784		
Fredon, very stony (50 percent)-----	11	0
Halsey, very stony (40 percent)-----	13	0
543222		
Andover, extremely stony (55 percent)-----	5	0
Buchanan, extremely stony (40 percent)-----	3	0
543243		
Berks (65 percent)-----	5	0
Weikert (25 percent)-----	3	0
543246		
Buchanan (75 percent)-----	3	0
543247		
Buchanan, extremely stony (80 percent)-----	2	0
543257		
Chippewa (90 percent)-----	13	0
543258		
Chippewa (90 percent)-----	13	0
543259		
Chippewa, extremely stony (90 percent)-----	12	0
543271		
Delaware (90 percent)-----	9	0
543276		
Fluvaquents (85 percent)-----	16	0
543292		
Hazleton, extremely stony (90 percent)-----	3	0
543293		
Hazleton, extremely stony (90 percent)-----	3	0
543299		
Laidig, extremely stony (90 percent)-----	3	0
543300		
Laidig, extremely stony (90 percent)-----	3	0
543304		
Laidig (50 percent)-----	3	0
Rubble land (40 percent)-----	0	0
543318		
Rubble land (75 percent)-----	0	0
543327		
Swartswood (90 percent)-----	6	0
543328		
Swartswood (90 percent)-----	6	0



# Soil Survey of Delaware Water Gap National Recreation Area

Table 17.--Total Soil Carbon--Continued

Map unit symbol, component name, and component percent	SOC	SIC
	<i>kg/m<sup>2</sup></i>	<i>kg/m<sup>2</sup></i>
543330		
Swartswood, extremely stony (50 percent)-----	14	0
Wurtsboro, extremely stony (30 percent)-----	5	0
543331		
Swartswood, extremely stony (50 percent)-----	14	0
Wurtsboro, extremely stony (30 percent)-----	5	0
543359		
Volusia (85 percent)-----	8	0
543360		
Volusia, extremely stony (85 percent)-----	7	0
543374		
Wurtsboro (90 percent)-----	5	0
543375		
Wurtsboro (90 percent)-----	5	0
612280		
Scio (80 percent)-----	13	0
612666		
Colonie (80 percent)-----	5	0
612668		
Hoosic, very stony (60 percent)-----	7	0
Hazen, very stony (30 percent)-----	10	0
612724		
Lordstown, very rocky (50 percent)-----	6	0
Wallpack, very rocky (40 percent)-----	6	0
612732		
Atherton, very poorly drained (60 percent)-----	33	0
Atherton, poorly drained (30 percent)-----	16	0
612738		
Fluvaquents, occasionally flooded (90 percent)---	6	0
612753		
Wallpack, aeolian mantle, very stony (85 percent)	5	0
612756		
Wallpack, aeolian mantle, very stony (85 percent)	5	0
612757		
Wallpack, aeolian mantle, very stony (85 percent)	5	0
612767		
Wellsboro, extremely stony (85 percent)-----	8	0
612768		
Wellsboro, extremely stony (85 percent)-----	8	0
613393		
Alden, extremely stony (90 percent)-----	16	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 17.--Total Soil Carbon--Continued

Map unit symbol, component name, and component percent	SOC	SIC
	<i>kg/m<sup>2</sup></i>	<i>kg/m<sup>2</sup></i>
613447		
Unadilla (85 percent)-----	14	0
613448		
Unadilla (85 percent)-----	14	0
614075		
Wurtsboro, extremely stony (80 percent)-----	9	0
Swartswood, extremely stony (20 percent)-----	7	0
620179		
Arnot, very rocky (55 percent)-----	4	0
Lordstown, very rocky (40 percent)-----	7	0
620180		
Arnot (45 percent)-----	4	0
Lordstown (40 percent)-----	6	0
Rock outcrop (15 percent)-----	0	0
620181		
Arnot (60 percent)-----	4	0
Lordstown (25 percent)-----	6	0
Rock outcrop (15 percent)-----	0	0
623089		
Chippewa, extremely stony (80 percent)-----	9	0
623109		
Farmington (50 percent)-----	6	0
Rock outcrop (40 percent)-----	0	0
624811		
Galway, very rocky (80 percent)-----	10	0
624813		
Lackawanna, extremely stony (85 percent)-----	10	0
624816		
Lordstown, very rocky (50 percent)-----	6	0
Wallpack, very rocky (35 percent)-----	6	0
624822		
Lordstown (50 percent)-----	6	0
Wallpack (35 percent)-----	4	0
624823		
Lordstown (50 percent)-----	6	0
Wallpack (35 percent)-----	4	0
624824		
Lordstown (50 percent)-----	6	0
Wallpack (35 percent)-----	4	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 17.--Total Soil Carbon--Continued

Map unit symbol, component name, and component percent	SOC	SIC
	kg/m <sup>2</sup>	kg/m <sup>2</sup>
624826		
Manlius, very rocky (60 percent)-----	4	0
Nassau, very rocky (25 percent)-----	4	0
624827		
Nassau, very rocky (55 percent)-----	4	0
Manlius, very rocky (44 percent)-----	4	0
624828		
Nassau, very rocky (55 percent)-----	4	0
Manlius, very rocky (44 percent)-----	6	0
624829		
Nassau, very rocky (55 percent)-----	4	0
Manlius, very rocky (44 percent)-----	6	0
624832		
Nassau (50 percent)-----	4	0
Rock outcrop (45 percent)-----	0	0
624841		
Oquaga (60 percent)-----	6	0
Rock outcrop (25 percent)-----	0	0
624845		
Rock outcrop (45 percent)-----	0	0
Farmington (35 percent)-----	6	0
Galway (20 percent)-----	10	0
624846		
Rock outcrop (40 percent)-----	0	0
Arnot (30 percent)-----	4	0
Rubble land (20 percent)-----	0	0
626816		
Udifulvents, occasionally flooded (90 percent)---	10	0
635458		
Oquaga, very rocky (55 percent)-----	6	0
Lackawanna, very rocky (30 percent)-----	10	0
635459		
Oquaga, very rocky (50 percent)-----	6	0
Lackawanna, very rocky (35 percent)-----	10	0
740953		
Delaware, rarely flooded (80 percent)-----	6	0
740968		
Nassau, very rocky (55 percent)-----	4	0
Manlius, very rocky (44 percent)-----	6	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 17.--Total Soil Carbon--Continued

Map unit symbol, component name, and component percent	SOC	SIC
	kg/m <sup>2</sup>	kg/m <sup>2</sup>
740969		
Nassau, very rocky (55 percent)-----	4	0
Manlius, very rocky (44 percent)-----	6	0
740971		
Oquaga, very rocky (55 percent)-----	6	0
Lackawanna, very rocky (30 percent)-----	10	0
740972		
Oquaga, very rocky (50 percent)-----	6	0
Lackawanna, very rocky (35 percent)-----	10	0
740974		
Oquaga (60 percent)-----	6	0
Rock outcrop (25 percent)-----	0	0
740975		
Rock outcrop (40 percent)-----	0	0
Arnot (30 percent)-----	4	0
Rubble land (20 percent)-----	0	0
740987		
Scio (80 percent)-----	13	0
740988		
Udifluvents, occasionally flooded (90 percent)---	10	0
740991		
Unadilla (85 percent)-----	14	0
740992		
Unadilla (85 percent)-----	14	0
740995		
Wellsboro, extremely stony (85 percent)-----	8	0
740996		
Wellsboro, extremely stony (85 percent)-----	8	0
741149		
Lackawanna, extremely stony (85 percent)-----	10	0
741150		
Lackawanna, extremely stony (85 percent)-----	10	0
801114		
Oquaga (75 percent)-----	6	0
Rock outcrop (15 percent)-----	0	0
810906		
Oquaga (75 percent)-----	6	0
Rock outcrop (15 percent)-----	0	0
1147465		
Alden, extremely stony (90 percent)-----	16	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 17.--Total Soil Carbon--Continued

Map unit symbol, component name, and component percent	SOC	SIC
	kg/m <sup>2</sup>	kg/m <sup>2</sup>
1147467		
Arnot, very rocky (55 percent)-----	4	0
Lordstown, very rocky (40 percent)-----	7	0
1147468		
Arnot (45 percent)-----	4	0
Lordstown (40 percent)-----	6	0
Rock outcrop (15 percent)-----	0	0
1147469		
Arnot (60 percent)-----	4	0
Lordstown (25 percent)-----	6	0
Rock outcrop (15 percent)-----	0	0
1147470		
Atherton, very poorly drained (60 percent)-----	33	0
Atherton, poorly drained (30 percent)-----	16	0
1147471		
Catden (85 percent)-----	135	0
1147474		
Chippewa, extremely stony (80 percent)-----	9	0
1147475		
Colonie (80 percent)-----	5	0
1147478		
Delaware, rarely flooded (80 percent)-----	6	0
1147482		
Fredon, very stony (50 percent)-----	11	0
Halsey, very stony (40 percent)-----	13	0
1147485		
Hazen, very stony (60 percent)-----	10	0
Hoosic, very stony (35 percent)-----	7	0
1147490		
Hoosic, very stony (60 percent)-----	7	0
Hazen, very stony (30 percent)-----	10	0
1147491		
Hoosic, very stony (50 percent)-----	7	0
Otisville, very stony (40 percent)-----	4	0
1147492		
Lackawanna, extremely stony (85 percent)-----	10	0
1147500		
Wurtsboro, extremely stony (90 percent)-----	9	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 17.--Total Soil Carbon--Continued

Map unit symbol, component name, and component percent	SOC	SIC
	<i>kg/m<sup>2</sup></i>	<i>kg/m<sup>2</sup></i>
1147501		
Wurtsboro, extremely stony (60 percent)-----	9	0
Swartswood, extremely stony (40 percent)-----	7	0
1147502		
Wurtsboro, extremely stony (60 percent)-----	9	0
Swartswood, extremely stony (40 percent)-----	7	0
1147527		
Udorthents (60 percent)-----	18	0
Urban land (40 percent)-----	0	0
1147532		
Udorthents (100 percent)-----	18	0
1147533		
Wurtsboro, extremely stony (80 percent)-----	9	0
Swartswood, extremely stony (20 percent)-----	7	0
1948749		
Arnot (90 percent)-----	6	0
1948750		
Arnot (90 percent)-----	6	0
1948751		
Arnot (90 percent)-----	6	0
1948774		
Conotton (90 percent)-----	6	4
1948775		
Conotton (95 percent)-----	6	4
1948776		
Conotton (95 percent)-----	6	4
1948777		
Conotton (95 percent)-----	6	4
1948797		
Manlius (90 percent)-----	4	0
1948802		
Manlius (90 percent)-----	4	0
1948818		
Manlius (90 percent)-----	4	0
1948832		
Penargyl (90 percent)-----	7	0
1948846		
Phelps (90 percent)-----	8	0
1948855		
Udorthents, loamy (95 percent)-----	8	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 17.--Total Soil Carbon--Continued

Map unit symbol, component name, and component percent	SOC	SIC
	<i>kg/m<sup>2</sup></i>	<i>kg/m<sup>2</sup></i>
1948989		
Urban land (65 percent)-----	0	0
Delaware (25 percent)-----	9	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 18.--Chemical Soil Properties

[Absence of an entry indicates that data were not estimated]

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	In	meq/100 g	meq/100 g	pH	Pct
290836					
Hoosic, very stony---	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-9	5.9-9.0	3.1-8.4	4.5-5.5	0
	9-21	5.4-7.4	2.3-3.9	4.5-5.5	0
	21-27	0.6-3.6	0.0-3.2	4.5-6.0	0
	27-37	0.6-3.6	0.0-3.2	4.5-6.0	0
	37-49	0.6-3.6	0.0-3.2	4.5-6.0	0
	49-60	0.6-3.6	0.0-3.2	4.5-6.0	0
Otisville, very stony	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	5.7-9.1	2.7-9.2	3.5-6.5	0
	2-7	0.6-3.8	0.0-3.2	3.5-6.5	0
	7-11	0.6-3.6	0.0-3.2	3.5-6.5	0
	11-19	0.6-3.6	0.0-3.2	3.5-6.5	0
	19-31	0.6-3.6	0.0-3.2	4.5-6.0	0
	31-43	0.6-3.6	0.0-3.2	4.5-6.0	0
	43-60	0.6-3.6	0.0-3.2	4.5-6.0	0
296265					
Alden-----	0-9	32.1-52.8	---	5.1-7.3	0
	9-35	6.8-21.7	---	5.6-7.3	0
	35-60	6.8-18.1	---	6.1-8.4	0-10
296269					
Fluvents, (alluvial land)-----	0-6	4.0-11.7	---	3.6-7.3	0
	6-42	3.1-13.0	---	3.6-7.3	0
	42-60	9.5-21.1	---	4.5-6.5	0
296271					
Alvira-----	0-10	---	2.8-5.5	3.6-5.5	0
	10-21	---	3.6-7.0	3.6-5.5	0
	21-60	---	3.6-7.0	3.6-5.5	0
Watson-----	0-10	---	2.4-5.4	4.5-5.5	0
	10-27	---	3.4-7.0	4.5-5.5	0
	27-60	---	3.0-6.0	4.5-5.5	0
296272					
Bath-----	0-8	---	3.3-8.1	4.5-6.0	0
	8-27	---	1.0-3.6	4.5-6.0	0
	27-60	3.0-9.0	---	4.5-6.5	0
	60-64	1.0-7.0	---	5.1-8.4	0
296273					
Bath-----	0-8	---	3.3-8.1	4.5-6.0	0
	8-27	---	1.0-3.6	4.5-6.0	0
	27-60	3.0-9.0	---	4.5-6.5	0
	60-64	1.0-7.0	---	5.1-8.4	0
296274					
Bath-----	0-8	---	3.3-8.1	4.5-6.0	0
	8-27	---	1.0-3.6	4.5-6.0	0
	27-60	3.0-9.0	---	4.5-6.5	0
	60-64	1.0-7.0	---	5.1-8.4	0



# Soil Survey of Delaware Water Gap National Recreation Area

Table 18.--Chemical Soil Properties--Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>
296275					
Bath-----	0-8	---	3.3-8.1	4.5-6.0	0
	8-27	---	1.0-3.6	4.5-6.0	0
	27-60	3.1-10.7	---	4.5-6.5	0
	60-64	2.1-10.7	---	5.1-8.4	0
296276					
Bath-----	0-8	---	3.3-8.1	4.5-6.0	0
	8-27	---	1.0-3.6	4.5-6.0	0
	27-60	3.1-10.7	---	4.5-6.5	0
	60-64	2.1-10.7	---	5.1-8.4	0
296277					
Benson-----	0-8	8.1-22.4	---	5.6-7.8	0
	8-18	4.3-15.0	---	6.1-7.8	0
	18-22	---	---	---	0
296278					
Benson-----	0-8	8.1-22.4	---	5.6-7.8	0
	8-18	4.3-15.0	---	6.1-7.8	0
	18-22	---	---	---	0
296279					
Benson-----	0-8	8.1-22.4	---	5.6-7.8	0
	8-18	4.3-15.0	---	6.1-7.8	0
	18-22	---	---	---	0
296280					
Braceville-----	0-3	---	2.8-7.3	4.5-6.0	0
	3-30	---	2.0-5.0	4.5-6.0	0
	30-55	4.0-13.9	---	5.1-6.5	0
	55-60	0.6-6.7	---	5.1-6.5	0
296281					
Braceville-----	0-3	---	2.8-7.3	4.5-6.0	0
	3-30	---	2.0-5.0	4.5-6.0	0
	30-55	4.0-13.9	---	5.1-6.5	0
	55-60	0.6-6.7	---	5.1-6.5	0
296283					
Buchanan-----	0-4	---	2.4-6.9	3.6-5.5	0
	4-25	---	3.6-6.0	3.6-5.5	0
	25-60	---	3.6-7.0	3.6-5.5	0
296288					
Chippewa-----	0-8	8.5-22.0	---	4.5-6.5	0
	8-16	10.7-24.7	---	4.5-6.5	0
	16-48	5.9-19.9	---	5.1-7.3	0
	48-80	5.9-19.9	---	5.6-8.4	0
Norwich-----	0-8	8.5-22.0	---	5.1-6.5	0
	8-16	10.7-20.1	---	5.1-6.5	0
	16-48	5.9-16.2	---	5.1-7.3	0
	48-80	6.0-20.0	---	5.6-8.4	0
296289					
Chippewa-----	0-8	8.5-22.0	---	4.5-6.5	0
	8-16	10.7-24.7	---	4.5-6.5	0
	16-48	5.9-19.9	---	5.1-7.3	0
	48-80	5.9-19.9	---	5.6-8.4	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 18.--Chemical Soil Properties--Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>
296289					
Norwich-----	0-8	8.5-22.0	---	5.1-6.5	0
	8-16	10.7-20.1	---	5.1-6.5	0
	16-48	5.9-16.2	---	5.1-7.3	0
	48-80	6.0-20.0	---	5.6-8.4	0
296295					
Udorthents, cut and fill.					
296297					
Dekalb-----	0-7	---	3.5-7.0	3.6-6.5	0
	7-24	---	1.4-3.6	3.6-5.5	0
	24-32	---	1.0-3.0	3.6-5.5	0
	32-36	---	---	---	0
296298					
Dekalb-----	0-7	---	3.5-7.0	3.6-6.5	0
	7-24	---	1.4-3.6	3.6-5.5	0
	24-32	---	1.0-3.0	3.6-5.5	0
	32-36	---	---	---	0
296303					
Hazleton-----	0-5	---	2.9-6.6	3.6-5.5	0
	5-31	---	1.4-3.6	3.6-5.5	0
	31-58	---	1.0-3.0	3.6-5.5	0
	58-69	---	---	---	0
296304					
Holly-----	0-8	11.7-21.0	---	5.6-7.3	0
	8-28	9.5-20.3	---	5.1-7.3	0
	28-41	5.7-18.5	---	5.6-7.8	0
	41-60	0.0-19.6	---	5.6-7.8	0
296311					
Lackawanna-----	0-8	---	2.0-5.4	4.5-5.5	0
	8-25	---	1.0-3.6	4.5-5.5	0
	25-60	---	1.0-3.6	4.5-6.0	0
Bath-----	0-8	---	3.3-8.1	4.5-6.0	0
	8-27	---	1.0-3.6	4.5-6.0	0
	27-60	3.1-10.0	---	4.5-6.5	0
	60-64	2.1-10.0	---	5.1-8.4	0
296312					
Lackawanna-----	0-8	---	2.0-5.4	4.5-5.5	0
	8-25	---	1.0-3.6	4.5-5.5	0
	25-60	---	1.0-3.6	4.5-6.0	0
296313					
Lackawanna-----	0-8	---	2.0-5.4	4.5-5.5	0
	8-25	---	1.0-3.6	4.5-5.5	0
	25-60	---	1.0-3.6	4.5-6.0	0
296315					
Lackawanna-----	0-8	---	2.0-5.4	4.5-5.5	0
	8-25	---	1.0-3.6	4.5-5.5	0
	25-60	---	1.0-3.6	4.5-6.0	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 18.--Chemical Soil Properties--Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>
296316					
Lackawanna-----	0-8	---	2.0-5.4	4.5-5.5	0
	8-25	---	1.0-3.6	4.5-5.5	0
	25-60	---	1.0-3.6	4.5-6.0	0
296317					
Laidig-----	0-6	---	1.4-5.4	3.6-5.5	0
	6-33	---	3.6-7.0	3.6-5.5	0
	33-65	---	3.6-7.0	3.6-5.5	0
296326					
Lordstown-----	0-7	---	3.6-7.0	4.5-6.5	0
	7-26	---	3.6-7.0	4.5-6.5	0
	26-30	4.0-12.0	---	5.1-6.0	0
	30-42	---	---	---	0
296327					
Lordstown-----	0-7	---	3.6-7.0	4.5-6.5	0
	7-26	---	3.6-7.0	4.5-6.5	0
	26-30	4.0-12.0	---	5.1-6.0	0
	30-42	---	---	---	0
296328					
Lordstown-----	0-7	6.2-14.9	---	4.5-6.5	0
	7-26	---	1.0-5.2	4.5-6.0	0
	26-30	2.5-11.7	---	5.1-6.0	0
	30-42	---	---	---	0
Oquaga-----	0-7	---	1.4-5.4	3.6-6.0	0
	7-30	---	1.4-5.4	3.6-6.0	0
	30-42	---	---	---	0
296329					
Mardin-----	0-8	---	3.3-8.1	4.5-6.0	0
	8-17	---	2.0-3.6	3.6-6.5	0
	17-21	---	2.0-3.6	3.6-6.5	0
	21-60	7.0-14.0	---	4.5-7.3	0
	60-80	5.0-13.0	---	5.1-8.4	0
296330					
Mardin-----	0-8	---	3.3-8.1	4.5-6.0	0
	8-17	---	2.0-3.6	3.6-6.5	0
	17-21	---	2.0-3.6	3.6-6.5	0
	21-60	7.0-14.0	---	4.5-7.3	0
	60-80	5.0-13.0	---	5.1-8.4	0
296331					
Mardin-----	0-8	---	2.0-5.4	4.5-5.5	0
	8-17	5.0-12.0	2.0-4.4	3.6-6.5	0
	17-21	5.0-12.0	2.0-4.4	3.6-6.5	0
	21-60	3.0-10.0	---	4.5-7.3	0
	60-80	3.0-9.0	---	5.1-8.4	0
296332					
Mardin-----	0-8	---	2.0-5.4	4.5-5.5	0
	8-17	5.0-12.0	2.0-4.4	3.6-6.5	0
	17-21	5.0-12.0	2.0-4.4	3.6-6.5	0
	21-60	3.0-10.0	---	4.5-7.3	0
	60-80	3.0-9.0	---	5.1-8.4	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 18.--Chemical Soil Properties--Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>
296335					
Meckesville-----	0-9	---	2.8-8.4	3.6-5.5	0
	9-36	---	3.6-7.0	3.6-5.5	0
	36-60	---	3.6-7.0	3.6-5.5	0
	60-64	---	2.0-7.0	3.6-5.5	0
296337					
Meckesville-----	0-9	---	2.8-8.4	3.6-5.5	0
	9-36	---	3.6-7.0	3.6-5.5	0
	36-60	---	3.6-7.0	3.6-5.5	0
	60-64	---	2.0-7.0	3.6-5.5	0
296338					
Morris-----	0-8	---	3.8-7.3	4.5-6.0	0
	8-17	5.9-21.2	---	4.5-6.5	0
	17-70	5.4-16.4	---	4.5-6.5	0
	70-80	4.3-15.0	---	4.5-6.5	0
296339					
Morris-----	0-8	---	3.0-5.0	4.5-6.0	0
	8-17	---	3.0-5.0	4.5-6.0	0
	17-70	7.4-17.3	---	4.5-6.5	0
	70-80	7.4-17.3	---	4.5-6.5	0
296340					
Morris-----	0-8	---	3.0-5.0	4.5-6.0	0
	8-17	---	3.0-5.0	4.5-6.0	0
	17-70	7.4-17.3	---	4.5-6.5	0
	70-80	7.4-17.3	---	4.5-6.5	0
296341					
Freetown, mucky peat-	0-6	30.0-80.0	37.5-74.3	3.6-4.4	0
	6-72	30.0-80.0	20.0-80.0	3.6-4.4	0
296342					
Paupack, mucky peat (shallow)-----	0-3	150.0-230.0	22.5-37.5	3.2-4.2	0
	3-26	150.0-230.0	22.5-37.5	3.2-4.2	0
	26-36	20.0-40.0	1.5-7.5	4.0-5.5	0
	36-70	2.0-20.0	1.0-5.1	4.0-5.5	0
296343					
Oquaga-----	0-7	---	2.9-9.9	3.6-6.0	0
	7-30	---	1.4-5.4	3.6-6.0	0
	30-42	---	---	---	0
Lackawanna-----	0-8	---	2.8-7.7	4.5-5.5	0
	8-25	---	1.0-3.6	4.5-5.5	0
	25-60	---	1.0-3.6	4.5-6.0	0
296344					
Oquaga-----	0-7	---	2.9-9.9	3.6-6.0	0
	7-30	---	1.4-5.4	3.6-6.0	0
	30-42	---	---	---	0
Lackawanna-----	0-8	---	2.8-7.7	4.5-5.5	0
	8-25	---	1.0-3.6	4.5-5.5	0
	25-60	---	1.0-3.6	4.5-6.0	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 18.--Chemical Soil Properties--Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>
296346					
Oquaga-----	0-7	---	1.4-5.4	3.6-6.0	0
	7-30	---	1.4-5.4	3.6-6.0	0
	30-42	---	---	---	0
Lackawanna-----	0-8	---	2.0-5.4	4.5-5.5	0
	8-25	---	1.0-3.6	4.5-5.5	0
	25-60	---	1.0-3.6	4.5-6.0	0
296347					
Oquaga-----	0-7	---	1.4-5.4	3.6-6.0	0
	7-30	---	1.4-5.4	3.6-6.0	0
	30-42	---	---	---	0
Lackawanna-----	0-8	---	2.0-5.4	4.5-5.5	0
	8-25	---	1.0-3.6	4.5-5.5	0
	25-60	---	1.0-3.6	4.5-6.0	0
296348					
Philo-----	0-10	---	3.5-6.6	4.5-6.0	0
	10-40	---	2.0-3.6	4.5-6.0	0
	40-60	---	1.0-3.6	4.5-6.0	0
296349					
Pope-----	0-10	---	1.8-6.0	3.6-5.5	0
	10-30	---	1.0-3.6	3.6-5.5	0
	30-60	---	1.0-4.0	3.6-5.5	0
296350					
Pope-----	0-10	---	1.8-6.0	3.6-5.5	0
	10-30	---	1.0-3.6	3.6-5.5	0
	30-60	---	1.0-4.0	3.6-5.5	0
296351					
Rexford, somewhat poorly drained-----	0-8	---	2.8-6.3	4.5-6.0	0
	8-18	5.9-14.1	---	5.1-6.5	0
	18-40	5.4-10.9	---	5.1-6.5	0
	40-63	2.5-9.5	---	5.1-6.5	0
Rexford, poorly drained-----	0-8	---	2.8-6.3	4.5-6.0	0
	8-18	5.9-14.1	---	5.1-6.5	0
	18-40	5.4-10.9	---	5.1-6.5	0
	40-63	2.5-9.5	---	5.1-6.5	0
296355					
Sheffield-----	0-7	---	5.9-9.2	4.5-5.5	0
	7-19	8.0-19.9	---	5.1-6.0	0
	19-38	13.8-18.7	---	5.6-7.3	0
	38-66	8.7-17.3	---	6.6-8.4	0
296363					
Dystrochrepts, very stony-----	0-6	---	2.9-6.6	3.6-5.5	0
	6-32	---	1.4-3.6	3.6-5.5	0
	32-56	---	1.0-3.0	3.6-5.5	0
	56-60	---	---	---	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 18.--Chemical Soil Properties--Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>
296369					
Wayland-----	0-9	12.4-27.3	---	5.1-7.8	0
	9-41	9.5-23.2	---	5.1-8.4	0
	41-60	8.1-17.3	---	5.6-8.4	0
296376					
Wellsboro-----	0-8	---	2.0-5.4	4.5-5.5	0
	8-17	---	3.0-5.4	4.5-6.0	0
	17-21	---	3.0-5.4	4.5-6.0	0
	21-60	---	3.0-5.4	4.5-6.0	0
	60-80	---	3.0-5.4	4.5-6.0	0
296379					
Wellsboro-----	0-8	---	2.0-5.4	4.5-5.5	0
	8-17	---	3.0-5.4	4.5-6.0	0
	17-21	---	3.0-5.4	4.5-6.0	0
	21-60	---	3.0-5.4	4.5-6.0	0
	60-80	---	3.0-5.4	4.5-6.0	0
296385					
Wyoming-----	0-7	---	3.1-6.6	3.6-6.0	0
	7-25	---	1.0-3.0	3.6-6.0	0
	25-60	---	0.2-2.2	3.6-6.0	0
296386					
Wyoming-----	0-7	---	3.1-6.6	3.6-6.0	0
	7-25	---	1.0-3.0	3.6-6.0	0
	25-60	---	0.2-2.2	3.6-6.0	0
296387					
Wyoming-----	0-7	---	3.1-6.6	3.6-6.0	0
	7-25	---	1.0-3.0	3.6-6.0	0
	25-60	---	0.2-2.2	3.6-6.0	0
296388					
Wyoming-----	0-7	---	3.1-6.6	3.6-6.0	0
	7-25	---	1.0-3.0	3.6-6.0	0
	25-60	---	0.2-2.2	3.6-6.0	0
296389					
Wyoming-----	0-8	---	3.1-6.6	3.6-6.0	0
	8-26	---	1.0-3.0	3.6-6.0	0
	26-60	---	0.2-2.2	3.6-6.0	0
297185					
Edgemere-----	0-2	15.0-30.0	3.0-15.0	4.0-5.5	0
	2-5	5.0-10.0	3.1-9.0	4.0-5.5	0
	5-24	5.0-10.0	1.6-3.8	4.0-5.5	0
	24-66	5.0-10.0	1.6-4.4	4.0-5.5	0
Shohola-----	0-3	5.0-15.0	3.1-6.0	3.5-5.0	0
	3-24	5.0-10.0	1.6-3.4	4.5-5.0	0
	24-72	0.0-5.0	1.6-3.4	4.5-5.5	0
297186					
Edgemere-----	0-2	15.0-30.0	3.0-15.0	4.0-5.5	0
	2-5	5.0-10.0	3.1-9.0	4.0-5.5	0
	5-24	5.0-10.0	1.6-3.8	4.0-5.5	0
	24-66	5.0-10.0	1.6-4.4	4.0-5.5	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 18.--Chemical Soil Properties--Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>
297188					
Manlius-----	0-5	10.0-23.0	2.7-9.6	3.5-6.0	0
	5-24	3.0-13.0	1.2-4.4	3.5-6.0	0
	24-30	2.0-9.0	1.0-3.0	4.5-6.5	0
	30-40	---	---	---	0
Arnot-----	0-3	15.0-25.0	3.9-8.1	3.6-6.0	0
	3-14	10.0-20.0	1.6-4.0	3.6-6.0	0
	14-24	---	---	---	0
297189					
Manlius-----	0-5	10.0-23.0	2.7-9.6	3.5-6.0	0
	5-24	3.0-13.0	1.2-4.4	3.5-6.0	0
	24-30	2.0-9.0	1.0-3.0	4.5-6.5	0
	30-40	---	---	---	0
Arnot-----	0-3	15.0-25.0	3.9-8.1	3.6-6.0	0
	3-14	10.0-20.0	1.6-4.0	3.6-6.0	0
	14-24	---	0.0-0.0	---	0
297190					
Braceville-----	0-11	5.0-10.0	2.5-6.0	4.5-6.0	0
	11-27	3.0-6.0	1.0-2.0	4.5-6.0	0
	27-48	3.0-6.0	1.0-3.0	5.1-6.5	0
	48-70	0.0-1.0	0.5-2.0	5.1-6.5	0
297191					
Wyalusing-----	0-6	15.0-25.0	6.0-16.0	5.1-6.5	0
	6-31	5.0-12.0	2.0-7.0	5.1-6.5	0
	31-70	0.0-5.0	0.5-2.0	5.1-6.5	0
297192					
Pope-----	0-6	10.0-20.0	1.8-6.0	3.6-5.5	0
	6-33	5.0-15.0	1.2-4.0	3.6-5.5	0
	33-70	5.0-15.0	1.1-4.6	3.6-5.5	0
297193					
Paupack-----	0-3	150.0-230.0	22.5-37.5	3.2-4.2	0
	3-26	150.0-230.0	22.5-37.5	3.2-4.2	0
	26-36	20.0-40.0	1.5-7.5	4.0-5.5	0
	36-70	2.0-20.0	1.0-5.1	4.0-5.5	0
297196					
Freetown-----	0-6	30.0-80.0	37.5-74.3	3.6-4.4	0
	6-72	30.0-80.0	20.0-80.0	3.6-4.4	0
297197					
Manlius-----	0-5	12.0-25.0	2.7-9.6	3.5-6.0	0
	5-24	3.0-13.0	1.2-4.4	3.5-6.0	0
	24-30	2.0-9.0	1.0-3.0	4.5-6.5	0
	30-40	---	---	---	0
297198					
Manlius-----	0-5	12.0-25.0	2.7-9.6	3.5-6.0	0
	5-24	3.0-13.0	1.2-4.4	3.5-6.0	0
	24-30	2.0-9.0	1.0-3.0	4.5-6.5	0
	30-40	---	---	---	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 18.--Chemical Soil Properties--Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>
297201					
Oquaga-----	0-2	15.0-25.0	2.9-11.4	3.6-6.0	0
	2-26	15.0-20.0	1.4-6.9	3.6-6.0	0
	26-32	15.0-20.0	1.4-6.9	3.6-6.0	0
	32-42	---	---	---	0
297203					
Delaware-----	0-14	5.0-10.0	4.0-9.0	5.1-7.3	0
	14-48	3.0-6.0	1.0-3.0	5.1-7.3	0
	48-72	3.0-6.0	1.0-3.0	5.6-7.3	0
297204					
Delaware-----	0-14	5.0-10.0	4.0-9.0	5.1-7.3	0
	14-48	3.0-6.0	1.0-3.0	5.1-7.3	0
	48-72	3.0-6.0	1.0-3.0	5.6-7.3	0
297205					
Delaware-----	0-14	5.0-10.0	4.0-9.0	5.1-7.3	0
	14-48	3.0-6.0	1.0-3.0	5.1-7.3	0
	48-72	3.0-6.0	1.0-3.0	5.6-7.3	0
297209					
Philo-----	0-6	10.0-20.0	3.5-6.6	4.5-6.0	0
	6-36	6.0-18.0	2.0-4.0	4.5-6.0	0
	36-70	4.0-10.0	1.0-4.0	4.5-6.0	0
297210					
Barbour-----	0-10	10.0-15.0	2.0-7.4	4.5-6.0	0
	10-38	5.0-10.0	1.2-4.0	4.5-6.0	0
	38-72	5.0-10.0	0.5-2.0	4.5-6.5	0
297216					
Wurtsboro-----	0-4	15.0-35.0	3.5-6.6	3.6-5.5	0
	4-22	2.0-8.0	2.0-4.0	3.6-5.5	0
	22-70	0.0-1.0	2.0-3.6	3.6-5.5	0
297217					
Wurtsboro-----	0-4	15.0-35.0	2.5-6.6	3.6-5.5	0
	4-22	2.0-8.0	1.0-4.0	3.6-5.5	0
	22-70	0.0-1.0	1.0-4.0	3.6-5.5	0
297227					
Arnot-----	0-3	12.0-22.0	3.9-8.1	3.6-6.0	0
	3-10	3.0-13.0	1.6-5.1	3.6-6.0	0
	10-14	3.0-13.0	1.6-5.1	3.6-6.0	0
	14-24	---	---	---	0
297228					
Arnot-----	0-3	12.0-22.0	3.9-8.1	3.6-6.0	0
	3-10	3.0-13.0	1.6-5.1	3.6-6.0	0
	10-14	3.0-13.0	1.6-5.1	3.6-6.0	0
	14-24	---	---	---	0
297229					
Wyoming-----	0-3	10.0-20.0	3.1-6.6	3.6-6.0	0
	3-33	5.0-10.0	1.0-3.4	3.6-6.0	0
	33-72	1.0-5.0	0.2-2.6	3.6-6.0	0
297230					
Wyoming-----	0-3	10.0-20.0	3.1-6.6	3.6-6.0	0
	3-33	5.0-10.0	1.0-3.4	3.6-6.0	0
	33-72	1.0-5.0	0.2-2.6	3.6-6.0	0



# Soil Survey of Delaware Water Gap National Recreation Area

Table 18.--Chemical Soil Properties--Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>
297231					
Wyoming-----	0-3	10.0-20.0	3.1-6.6	3.6-6.0	0
	3-33	5.0-10.0	1.0-3.4	3.6-6.0	0
	33-72	1.0-5.0	0.2-2.6	3.6-6.0	0
297236					
Suncook-----	0-10	5.0-15.0	4.0-9.0	4.5-6.5	0
	10-70	1.0-3.0	0.3-1.0	4.5-6.5	0
297237					
Mardin-----	0-8	12.0-25.0	4.3-8.9	3.6-6.5	0
	8-17	5.0-12.0	2.0-4.4	3.6-6.5	0
	17-21	5.0-12.0	2.0-4.4	3.6-6.5	0
	21-30	3.0-10.0	2.0-4.0	4.5-7.3	0
	30-60	3.0-9.0	2.0-4.0	5.1-8.4	0
	60-80	3.0-9.0	2.0-4.0	5.1-8.4	0
297238					
Mardin-----	0-8	12.0-25.0	4.3-8.9	3.6-6.5	0
	8-17	5.0-12.0	2.0-4.4	3.6-6.5	0
	17-21	5.0-12.0	2.0-4.4	3.6-6.5	0
	21-30	3.0-10.0	2.0-4.0	4.5-7.3	0
	30-60	3.0-9.0	2.0-4.0	5.1-8.4	0
	60-80	3.0-9.0	2.0-4.0	5.1-8.4	0
297239					
Mardin-----	0-8	15.0-25.0	4.3-8.9	3.6-6.5	0
	8-17	5.0-12.0	2.0-4.4	3.6-6.5	0
	17-21	5.0-12.0	2.0-4.4	3.6-6.5	0
	21-30	3.0-10.0	2.0-4.0	4.5-7.3	0
	30-60	3.0-9.0	2.0-4.0	5.1-8.4	0
	60-80	3.0-9.0	2.0-4.0	5.1-8.4	0
297240					
Mardin-----	0-8	15.0-25.0	4.3-8.9	3.6-6.5	0
	8-17	5.0-12.0	2.0-4.4	3.6-6.5	0
	17-21	5.0-12.0	2.0-4.4	3.6-6.5	0
	21-30	3.0-10.0	2.0-4.0	4.5-7.3	0
	30-60	3.0-9.0	2.0-4.0	5.1-8.4	0
	60-80	3.0-9.0	2.0-4.0	5.1-8.4	0
297241					
Unadilla-----	0-13	12.0-28.0	2.5-9.0	4.5-6.0	0
	13-49	3.0-8.0	0.6-3.8	4.5-6.0	0
	49-80	2.0-5.0	0.2-1.8	4.5-6.0	0
297242					
Shohola-----	0-3	5.0-15.0	3.1-6.0	3.5-5.0	0
	3-24	5.0-10.0	1.6-3.4	4.5-5.0	0
	24-72	0.0-5.0	1.6-3.4	4.5-5.5	0
Edgemere-----	0-2	15.0-30.0	3.0-15.0	4.0-5.5	0
	2-5	5.0-10.0	3.1-9.0	4.0-5.5	0
	5-24	5.0-10.0	1.6-3.8	4.0-5.5	0
	24-66	5.0-10.0	1.6-4.4	4.0-5.5	0
297243					
Shohola-----	0-3	5.0-15.0	3.1-6.0	3.5-5.0	0
	3-24	5.0-10.0	1.6-3.4	4.5-5.0	0
	24-72	0.0-5.0	1.6-3.4	4.5-5.5	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 18.--Chemical Soil Properties--Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>
297243					
Edgemere-----	0-2	15.0-30.0	3.0-15.0	4.0-5.5	0
	2-5	5.0-10.0	3.1-9.0	4.0-5.5	0
	5-24	5.0-10.0	1.6-3.8	4.0-5.5	0
	24-66	5.0-10.0	1.6-4.4	4.0-5.5	0
297244					
Lordstown-----	0-3	15.0-25.0	7.0-17.0	4.5-6.5	0
	3-28	15.0-25.0	1.4-6.0	4.5-6.0	0
	28-30	5.0-15.0	1.0-4.0	4.5-6.0	0
	30-40	---	---	---	0
Swartswood-----	0-4	15.0-35.0	6.2-11.5	3.6-5.5	0
	4-32	3.0-10.0	2.0-4.8	3.6-5.5	0
	32-70	3.0-10.0	1.6-4.4	3.6-5.5	0
297247					
Chenango-----	0-10	20.0-35.0	2.5-6.9	4.5-6.0	0
	10-29	10.0-20.0	1.0-3.2	4.5-6.0	0
	29-70	3.0-8.0	0.5-3.0	5.1-7.8	0
297248					
Chenango-----	0-10	20.0-35.0	2.5-6.9	4.5-6.0	0
	10-29	10.0-20.0	1.0-3.2	4.5-6.0	0
	29-70	3.0-8.0	0.5-3.0	5.1-7.8	0
297249					
Chenango-----	0-10	20.0-35.0	2.5-6.9	4.5-6.0	0
	10-29	10.0-20.0	1.0-3.2	4.5-6.0	0
	29-70	3.0-8.0	0.5-3.0	5.1-7.8	0
297253					
Craigsville-----	0-5	10.0-15.0	2.5-6.8	4.5-5.5	0
	5-27	5.0-10.0	1.0-3.4	4.5-5.5	0
	27-77	5.0-10.0	1.0-2.4	4.5-5.5	0
Wyoming-----	0-3	10.0-15.0	3.1-6.6	3.6-6.0	0
	3-33	5.0-10.0	1.0-3.4	3.6-6.0	0
	33-72	1.0-5.0	0.2-2.6	3.6-6.0	0
298049					
Wurtsboro, extremely stony-----	0-2	85.0-94.4	31.5-36.9	4.5-6.0	0
	2-3	5.9-13.4	3.1-11.1	3.5-5.5	0
	3-5	2.3-4.4	1.1-1.8	3.5-5.5	0
	5-6	7.8-14.8	3.6-5.9	3.5-5.5	0
	6-18	2.3-6.5	0.1-5.7	3.5-5.5	0
	18-24	2.3-6.5	0.1-5.7	3.5-5.5	0
	24-30	1.2-4.3	0.0-2.3	3.5-5.5	0
	30-60	1.2-4.3	0.0-2.3	3.5-5.5	0
298050					
Wurtsboro, extremely stony-----	0-2	85.0-94.4	31.5-36.9	4.5-6.0	0
	2-3	5.9-13.4	3.1-11.1	3.5-5.5	0
	3-4	2.3-4.4	1.1-1.8	3.5-5.5	0
	4-6	7.8-14.8	3.6-5.9	3.5-5.5	0
	6-18	2.3-6.5	0.1-5.7	3.5-5.5	0
	18-24	2.3-6.5	0.1-5.7	3.5-5.5	0
	24-33	1.2-4.3	0.0-2.3	3.5-5.5	0
	33-60	1.2-4.3	0.0-2.3	3.5-5.5	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 18.--Chemical Soil Properties--Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>
298050 Swartswood, extremely stony-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	5.9-13.4	3.1-11.1	3.5-5.5	0
	2-3	2.3-5.0	1.1-1.8	3.5-5.5	0
	3-4	7.8-14.8	3.6-5.9	3.5-5.5	0
	4-21	2.3-6.5	0.1-5.7	3.5-5.5	0
	21-32	1.2-4.3	0.0-2.3	3.5-5.5	0
	32-60	1.2-4.3	0.0-2.3	3.5-5.5	0
298051 Wurtsboro, extremely stony-----	0-2	85.0-94.4	31.5-36.9	4.5-6.0	0
	2-3	5.9-13.4	3.1-11.1	3.5-5.5	0
	3-4	2.3-4.4	1.1-1.8	3.5-5.5	0
	4-6	7.8-14.8	3.6-5.9	3.5-5.5	0
	6-18	2.3-6.5	0.1-5.7	3.5-5.5	0
	18-24	2.3-6.5	0.1-5.7	3.5-5.5	0
	24-33	1.2-4.3	0.0-2.3	3.5-5.5	0
	33-60	1.2-4.3	0.0-2.3	3.5-5.5	0
Swartswood, extremely stony-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	5.9-13.4	3.1-11.1	3.5-5.5	0
	2-3	2.3-5.0	1.1-1.8	3.5-5.5	0
	3-4	7.8-14.8	3.6-5.9	3.5-5.5	0
	4-21	2.3-6.5	0.1-5.7	3.5-5.5	0
	21-32	1.2-4.3	0.0-2.3	3.5-5.5	0
	32-60	1.2-4.3	0.0-2.3	3.5-5.5	0
298075 Colonie-----	0-2	3.5-7.7	0.0-3.3	5.1-6.5	0
	2-11	3.5-7.7	0.0-3.3	5.1-6.5	0
	11-24	0.6-3.8	0.0-8.7	5.1-6.5	0
	24-40	0.6-3.8	0.0-8.7	5.1-7.3	0
	40-62	0.6-3.8	0.0-8.7	5.1-7.3	0
298188 Lackawanna, extremely stony-----	0-2	85.0-94.4	31.5-36.9	4.5-6.0	0
	2-3	5.9-13.4	3.1-11.1	3.5-5.5	0
	3-7	2.3-4.4	1.1-1.8	3.5-5.5	0
	7-8	7.8-14.8	3.6-20.0	3.5-5.5	0
	8-16	4.6-6.5	0.1-5.7	3.5-5.5	0
	16-24	4.6-6.5	0.1-5.7	3.5-5.5	0
	24-29	1.2-4.3	0.0-2.3	3.5-5.5	0
	29-60	1.2-4.3	0.0-2.3	3.5-5.5	0
298189 Lackawanna, extremely stony-----	0-2	85.0-94.4	31.5-36.9	4.5-6.0	0
	2-3	5.9-13.4	3.1-11.1	3.5-5.5	0
	3-7	2.3-4.4	1.1-1.8	3.5-5.5	0
	7-8	7.8-14.8	3.6-20.0	3.5-5.5	0
	8-16	4.6-6.5	0.1-5.7	3.5-5.5	0
	16-24	4.6-6.5	0.1-5.7	3.5-5.5	0
	24-29	1.2-4.3	0.0-2.3	3.5-5.5	0
	29-60	1.2-4.3	0.0-2.3	3.5-5.5	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 18.--Chemical Soil Properties--Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>
298221 Swartswood, extremely stony-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	5.9-13.4	3.1-11.1	3.5-5.5	0
	2-3	2.3-5.0	1.1-1.8	3.5-5.5	0
	3-4	7.8-14.8	3.6-5.9	3.5-5.5	0
	4-21	2.3-6.5	0.1-5.7	3.5-5.5	0
	21-32	1.2-4.3	0.0-2.3	3.5-5.5	0
	32-60	1.2-4.3	0.0-2.3	3.5-5.5	0
298222 Swartswood, extremely stony-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	5.9-13.4	3.1-11.1	3.5-5.5	0
	2-3	2.3-5.0	1.1-1.8	3.5-5.5	0
	3-4	7.8-14.8	3.6-5.9	3.5-5.5	0
	4-21	2.3-6.5	0.1-5.7	3.5-5.5	0
	21-32	1.2-4.3	0.0-2.3	3.5-5.5	0
	32-60	1.2-4.3	0.0-2.3	3.5-5.5	0
298223 Swartswood, extremely stony-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	5.9-13.4	3.1-11.1	3.5-5.5	0
	2-3	2.3-5.0	1.1-1.8	3.5-5.5	0
	3-4	7.8-14.8	3.6-5.9	3.5-5.5	0
	4-21	2.3-6.5	0.1-5.7	3.5-5.5	0
	21-32	1.2-4.3	0.0-2.3	3.5-5.5	0
	32-60	1.2-4.3	0.0-2.3	3.5-5.5	0
298255 Delaware, rarely flooded-----	0-1	85.0-94.4	31.5-36.9	5.1-6.5	0
	1-4	3.4-12.6	0.3-9.3	5.1-6.5	0
	4-11	3.4-12.6	0.3-9.3	5.1-6.5	0
	11-20	2.2-7.0	0.3-4.1	5.1-6.5	0
	20-33	2.2-7.0	0.3-4.1	5.1-6.5	0
	33-41	2.2-7.0	0.3-4.1	5.1-6.5	0
	41-56	1.3-3.7	1.0-4.2	5.1-6.5	0
	56-60	1.3-3.7	1.0-4.2	5.1-6.5	0
298256 Delaware, rarely flooded-----	0-1	85.0-94.4	31.5-36.9	5.1-6.5	0
	1-4	3.4-12.6	0.3-9.3	5.1-6.5	0
	4-11	3.4-12.6	0.3-9.3	5.1-6.5	0
	11-20	2.2-7.0	0.3-4.1	5.1-6.5	0
	20-33	2.2-7.0	0.3-4.1	5.1-6.5	0
	33-41	2.2-7.0	0.3-4.1	5.1-6.5	0
	41-56	1.3-3.7	1.0-4.2	5.1-6.5	0
	56-60	1.3-3.7	1.0-4.2	5.1-6.5	0
298257 Wallpack-----	0-3	3.5-11.4	3.1-5.4	5.1-6.5	0
	3-9	3.5-11.4	3.1-5.4	5.1-6.5	0
	9-16	1.7-15.4	1.3-4.8	5.1-6.5	0
	16-25	1.2-8.8	0.6-5.3	5.6-7.3	0
	25-65	1.2-8.8	0.6-5.3	5.6-7.8	0

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Table 18.--Chemical Soil Properties--Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>
298258					
Wallpack-----	0-3	3.5-11.4	3.1-5.4	5.1-6.5	0
	3-9	3.5-11.4	3.1-5.4	5.1-6.5	0
	9-16	1.7-15.4	1.3-4.8	5.1-6.5	0
	16-25	1.2-8.8	0.6-5.3	5.6-7.3	0
	25-65	1.2-8.8	0.6-5.3	5.6-7.8	0
298259					
Wallpack, extremely stony-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	8.0-35.0	6.0-20.0	5.1-6.5	0
	2-5	6.0-9.4	0.0-3.9	5.1-6.5	0
	5-18	1.7-15.4	1.3-4.8	5.1-6.5	0
	18-24	1.2-8.8	0.6-5.3	5.6-7.3	0
	24-42	1.2-8.8	0.6-5.3	5.6-7.3	0
	42-60	1.2-8.8	0.6-5.3	5.6-7.8	0
298260					
Wallpack, extremely stony-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	8.0-35.0	6.0-20.0	5.1-6.5	0
	2-5	6.0-9.4	0.0-3.9	5.1-6.5	0
	5-18	1.7-15.4	1.3-4.8	5.1-6.5	0
	18-24	1.2-8.8	0.6-5.3	5.6-7.3	0
	24-42	1.2-8.8	0.6-5.3	5.6-7.3	0
	42-60	1.2-8.8	0.6-5.3	5.6-7.8	0
298261					
Wallpack-----	0-3	3.5-11.4	3.1-5.4	5.1-6.5	0
	3-9	3.5-11.4	3.1-5.4	5.1-6.5	0
	9-16	1.7-15.4	1.3-4.8	5.1-6.5	0
	16-25	1.2-8.8	0.6-5.3	5.6-7.3	0
	25-65	1.2-8.8	0.6-5.3	5.6-7.8	0
298262					
Wallpack, extremely stony-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	8.0-35.0	6.0-20.0	5.1-6.5	0
	2-5	6.0-9.4	0.0-3.9	5.1-6.5	0
	5-18	1.7-15.4	1.3-4.8	5.1-6.5	0
	18-24	1.2-8.8	0.6-5.3	5.6-7.3	0
	24-42	1.2-8.8	0.6-5.3	5.6-7.3	0
	42-60	1.2-8.8	0.6-5.3	5.6-7.8	0
298265					
Venango, extremely stony-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-6	10.9-15.1	4.4-11.1	3.5-6.0	0
	6-16	4.6-9.0	0.4-12.3	3.5-6.0	0
	16-22	3.5-9.0	0.0-12.3	4.5-6.5	0
	22-34	3.5-9.0	0.0-12.3	4.5-6.5	0
	34-60	3.5-9.0	0.0-12.3	5.1-7.3	0
298266					
Venango, extremely stony-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-6	10.9-15.1	4.4-11.1	3.5-6.0	0
	6-16	4.6-9.0	0.4-12.3	3.5-6.0	0
	16-22	3.5-9.0	0.0-12.3	4.5-6.5	0
	22-34	3.5-9.0	0.0-12.3	4.5-6.5	0
	34-60	3.5-9.0	0.0-12.3	5.1-7.3	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 18.--Chemical Soil Properties--Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>
298409 Swartswood, extremely stony-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	5.9-13.4	3.1-11.1	3.5-5.5	0
	2-3	2.3-5.0	1.1-1.8	3.5-5.5	0
	3-4	7.8-14.8	3.6-5.9	3.5-5.5	0
	4-21	2.3-6.5	0.1-5.7	3.5-5.5	0
	21-32	1.2-4.3	0.0-2.3	3.5-5.5	0
	32-60	1.2-4.3	0.0-2.3	3.5-5.5	0
298411 Swartswood, extremely stony-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	5.9-13.4	3.1-11.1	3.5-5.5	0
	2-3	2.3-5.0	1.1-1.8	3.5-5.5	0
	3-4	7.8-14.8	3.6-5.9	3.5-5.5	0
	4-21	2.3-6.5	0.1-5.7	3.5-5.5	0
	21-32	1.2-4.3	0.0-2.3	3.5-5.5	0
	32-60	1.2-4.3	0.0-2.3	3.5-5.5	0
298413 Swartswood, extremely stony-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	5.9-13.4	3.1-11.1	3.5-5.5	0
	2-3	2.3-5.0	1.1-1.8	3.5-5.5	0
	3-4	7.8-14.8	3.6-5.9	3.5-5.5	0
	4-21	2.3-6.5	0.1-5.7	3.5-5.5	0
	21-32	1.2-4.3	0.0-2.3	3.5-5.5	0
	32-60	1.2-4.3	0.0-2.3	3.5-5.5	0
318498 Hazen, very stony----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-10	5.9-9.0	3.1-8.4	5.6-6.5	0
	10-18	5.4-7.4	2.3-3.9	5.6-6.5	0
	18-29	0.6-3.6	0.0-3.2	6.1-7.8	0
	29-41	0.6-3.6	0.0-3.2	6.1-7.8	0
	41-60	0.6-3.6	0.0-3.2	6.1-7.8	0
Hoosic, very stony---	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-9	5.9-9.0	3.1-8.4	4.5-5.5	0
	9-21	5.4-7.4	2.3-3.9	4.5-5.5	0
	21-27	0.6-3.6	0.0-3.2	4.5-6.0	0
	27-37	0.6-3.6	0.0-3.2	4.5-6.0	0
	37-49	0.6-3.6	0.0-3.2	4.5-6.0	0
	49-60	0.6-3.6	0.0-3.2	4.5-6.0	0
318533 Hazen, very stony----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-10	5.9-9.0	3.1-8.4	5.6-6.5	0
	10-18	5.4-7.4	2.3-3.9	5.6-6.5	0
	18-29	0.6-3.6	0.0-3.2	6.1-7.8	0
	29-41	0.6-3.6	0.0-3.2	6.1-7.8	0
	41-60	0.6-3.6	0.0-3.2	6.1-7.8	0
Hoosic, very stony---	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-9	5.9-9.0	3.1-8.4	4.5-5.5	0
	9-21	5.4-7.4	2.3-3.9	4.5-5.5	0
	21-27	0.6-3.6	0.0-3.2	4.5-6.0	0
	27-37	0.6-3.6	0.0-3.2	4.5-6.0	0
	37-49	0.6-3.6	0.0-3.2	4.5-6.0	0
	49-60	0.6-3.6	0.0-3.2	4.5-6.0	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 18.--Chemical Soil Properties--Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>
319783					
Catden-----	0-2	102.1-146.7	---	4.5-7.3	0
	2-13	102.1-146.7	---	4.5-7.3	0
	13-20	102.1-146.7	---	4.5-7.3	0
	20-32	102.1-146.7	---	4.5-7.3	0
	32-60	102.1-146.7	---	4.5-7.3	0
319784					
Fredon, very stony---	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-8	3.5-8.7	3.1-8.0	5.1-7.3	0
	8-14	2.3-6.5	0.1-5.7	5.1-7.3	0
	14-18	2.3-6.5	0.1-5.7	5.1-7.3	0
	18-23	2.3-6.5	0.1-5.7	5.1-7.3	0
	23-31	0.6-3.6	0.0-3.2	5.6-8.4	0
	31-36	0.6-3.6	0.0-3.2	5.6-8.4	0
	36-45	0.6-3.6	0.0-3.2	5.6-8.4	0
	45-55	0.6-3.6	0.0-3.2	5.6-8.4	0
	55-60	0.6-3.6	0.0-3.2	5.6-8.4	0
Halsey, very stony---	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-5	3.5-8.7	3.1-8.0	5.1-7.3	0
	5-11	3.5-8.7	3.1-8.0	5.1-7.3	0
	11-20	2.3-6.5	0.1-5.7	5.1-7.3	0
	20-25	0.6-3.6	0.0-3.2	5.6-8.4	0
	25-35	0.6-3.6	0.0-3.2	5.6-8.4	0
	35-49	0.6-3.6	0.0-3.2	5.6-8.4	0
	49-56	0.6-3.6	0.0-3.2	5.6-8.4	0
	56-60	0.6-3.6	0.0-3.2	5.6-8.4	0
543222					
Andover, extremely stony-----	0-8	---	2.3-9.5	4.2-6.2	0
	8-17	---	5.7-18.1	4.5-5.5	0
	17-53	---	5.7-18.1	4.5-5.5	0
	53-65	---	5.7-21.0	4.5-5.5	0
Buchanan, extremely stony-----	0-6	---	1.7-4.9	3.6-5.5	0
	6-23	---	3.5-7.2	3.6-5.5	0
	23-47	---	3.5-11.0	3.6-5.5	0
	47-61	---	3.8-11.0	3.6-5.5	0
543243					
Berks-----	0-10	---	1.0-6.4	4.2-6.6	0
	10-26	---	1.3-16.3	3.6-6.5	0
	26-33	---	1.3-9.5	3.6-6.5	0
	33-43	---	---	---	0
Weikert-----	0-8	---	3.6-8.4	4.5-6.0	0
	8-15	---	4.6-13.4	4.5-6.0	0
	15-18	---	4.6-13.4	4.5-6.0	0
	18-20	---	---	---	0
543246					
Buchanan-----	0-7	3.7-9.9	---	4.0-6.0	0
	7-21	---	2.9-7.7	3.5-5.5	0
	21-65	---	3.1-7.7	3.5-5.5	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 18.--Chemical Soil Properties--Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>
543247 Buchanan, extremely stony-----	0-3	3.7-9.9	---	4.0-6.0	0
	3-21	---	2.9-7.7	3.5-5.5	0
	21-65	---	3.1-7.7	3.5-5.5	0
543257 Chippewa-----	0-8	18.0-35.0	---	4.5-6.5	0
	8-16	5.0-16.0	---	4.5-6.5	0
	16-48	5.0-12.0	---	5.1-7.3	0
	48-80	2.0-11.0	---	5.6-8.4	0-5
543258 Chippewa-----	0-8	18.0-35.0	---	4.5-6.5	0
	8-16	5.0-16.0	---	4.5-6.5	0
	16-48	5.0-12.0	---	5.1-7.3	0
	48-80	2.0-11.0	---	5.6-8.4	0-5
543259 Chippewa, extremely stony-----	0-8	18.0-35.0	---	4.5-6.5	0
	8-16	5.0-16.0	---	4.5-6.5	0
	16-48	5.0-12.0	---	5.1-7.3	0
	48-80	2.0-11.0	---	5.6-8.4	0-5
543271 Delaware-----	0-10	5.0-10.0	---	5.1-7.3	0
	10-40	3.0-6.0	---	5.1-7.3	0
	40-87	3.0-6.0	---	5.6-7.3	0
543276 Fluvaquents-----	0-6	2.0-10.0	1.8-8.4	3.5-7.3	0
	6-62	2.0-15.0	---	4.5-7.3	0
543292 Hazleton, extremely stony-----	0-6	---	1.5-4.9	4.2-6.6	0
	6-43	---	1.9-8.4	3.6-5.5	0
	43-55	---	1.3-6.8	3.6-5.5	0
	55-80	---	---	---	0
543293 Hazleton, extremely stony-----	0-6	---	1.5-4.9	4.2-6.6	0
	6-43	---	1.9-8.4	3.6-5.5	0
	43-60	---	1.3-6.8	3.6-5.5	0
	60-80	---	---	---	0
543299 Laidig, extremely stony-----	0-3	---	1.5-7.8	4.2-6.6	0
	3-38	---	5.7-18.1	3.6-5.5	0
	38-62	---	5.7-18.1	3.6-5.5	0
543300 Laidig, extremely stony-----	0-3	---	1.5-7.8	4.2-6.6	0
	3-38	---	5.7-18.1	3.6-5.5	0
	38-62	---	5.7-18.1	3.6-5.5	0



# Soil Survey of Delaware Water Gap National Recreation Area

Table 18.--Chemical Soil Properties--Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>
543304					
Laidig-----	0-3	---	1.5-7.8	4.2-6.6	0
	3-38	---	5.7-18.1	3.6-5.5	0
	38-62	---	5.7-18.1	3.6-5.5	0
543327					
Swartswood-----	0-11	10.0-25.0	3.9-7.0	4.2-6.6	0
	11-34	3.0-10.0	2.0-4.4	3.6-5.5	0
	34-47	3.0-10.0	1.6-4.4	3.6-5.5	0
543328					
Swartswood-----	0-11	10.0-25.0	3.9-7.0	4.2-6.6	0
	11-34	3.0-10.0	2.0-4.4	3.6-5.5	0
	34-47	3.0-10.0	1.6-4.4	3.6-5.5	0
543330					
Swartswood, extremely stony----	0-11	15.0-35.0	6.2-11.5	4.2-6.6	0
	11-34	3.0-10.0	2.0-4.8	3.6-5.5	0
	34-47	3.0-10.0	1.6-4.4	3.6-5.5	0
Wurtsboro, extremely stony-----	0-10	---	10.0-30.0	4.2-6.6	0
	10-20	---	2.0-8.0	3.6-5.5	0
	20-64	---	0.0-1.0	3.6-5.5	0
543331					
Swartswood, extremely stony----	0-11	15.0-35.0	6.2-11.5	4.2-6.6	0
	11-34	3.0-10.0	2.0-4.8	3.6-5.5	0
	34-47	3.0-10.0	1.6-4.4	3.6-5.5	0
Wurtsboro, extremely stony-----	0-10	---	10.0-30.0	4.2-6.6	0
	10-20	---	2.0-8.0	3.6-5.5	0
	20-64	---	0.0-1.0	3.6-5.5	0
543359					
Volusia-----	0-8	12.0-25.0	---	4.5-6.5	0
	8-15	5.0-12.0	---	4.5-6.5	0
	15-70	3.0-10.0	---	5.1-7.3	0
	70-80	3.0-9.0	---	5.6-8.4	0
543360					
Volusia, extremely stony-----	0-8	15.0-25.0	---	4.5-6.5	0
	8-15	5.0-12.0	---	4.5-6.5	0
	15-70	3.0-10.0	---	5.1-7.3	0
	70-80	3.0-9.0	---	5.6-8.4	0
543374					
Wurtsboro-----	0-10	15.0-30.0	2.8-6.3	4.2-6.6	0
	10-20	2.0-8.0	2.0-4.4	3.6-5.5	0
	20-64	2.0-8.0	2.0-4.4	3.6-5.5	0
543375					
Wurtsboro-----	0-10	15.0-30.0	2.8-6.3	4.2-6.6	0
	10-20	2.0-8.0	2.0-4.4	3.6-5.5	0
	20-64	2.0-8.0	2.0-4.4	3.6-5.5	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 18.--Chemical Soil Properties--Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>
612280					
Scio-----	0-6	8.3-10.2	6.6-8.7	3.5-6.0	0
	6-13	8.3-10.2	6.6-8.7	3.5-6.0	0
	13-23	7.1-13.9	4.6-10.2	3.5-6.0	0
	23-28	7.1-13.9	4.6-10.2	3.5-6.0	0
	28-50	7.1-13.9	4.6-10.2	3.5-6.0	0
	50-59	8.7-11.5	6.1-11.5	5.1-7.8	0
	59-72	8.7-11.5	6.1-11.5	5.1-7.8	0
612666					
Colonie-----	0-2	3.5-7.7	0.0-3.3	5.1-6.5	0
	2-11	3.5-7.7	0.0-3.3	5.1-6.5	0
	11-24	0.6-3.8	0.0-8.7	5.1-6.5	0
	24-40	0.6-3.8	0.0-8.7	5.1-7.3	0
	40-62	0.6-3.8	0.0-8.7	5.1-7.3	0
612668					
Hoosic, very stony---	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-9	5.9-9.0	3.1-8.4	4.5-5.5	0
	9-21	5.4-7.4	2.3-3.9	4.5-5.5	0
	21-27	0.6-3.6	0.0-3.2	4.5-6.0	0
	27-37	0.6-3.6	0.0-3.2	4.5-6.0	0
	37-49	0.6-3.6	0.0-3.2	4.5-6.0	0
	49-60	0.6-3.6	0.0-3.2	4.5-6.0	0
Hazen, very stony----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-10	5.9-9.0	3.1-8.4	5.6-6.5	0
	10-18	5.4-7.4	2.3-3.9	5.6-6.5	0
	18-29	0.6-3.6	0.0-3.2	6.1-7.8	0
	29-41	0.6-3.6	0.0-3.2	6.1-7.8	0
	41-60	0.6-3.6	0.0-3.2	6.1-7.8	0
612724					
Lordstown, very rocky	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	5.9-13.4	3.1-11.1	4.5-6.0	0
	2-3	2.3-4.4	1.1-1.8	4.5-6.0	0
	3-5	4.6-6.5	0.1-5.7	4.5-6.0	0
	5-17	4.6-6.5	0.1-5.7	4.5-6.0	0
	17-22	4.6-6.5	0.1-5.7	4.5-6.0	0
	22-36	2.3-6.5	0.1-5.7	5.1-6.0	0
	36-80	---	---	---	0
Wallpack, very rocky-	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	8.0-35.0	6.0-20.0	5.1-6.5	0
	2-5	6.0-9.4	0.0-3.9	5.1-6.5	0
	5-18	1.7-15.4	1.3-4.8	5.1-6.5	0
	18-24	1.2-8.8	0.6-5.3	5.6-7.3	0
	24-42	1.2-8.8	0.6-5.3	5.6-7.3	0
	42-60	1.2-8.8	0.6-5.3	5.6-7.8	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 18.--Chemical Soil Properties--Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>
612732					
Atherton, very poorly drained-----	0-2	75.0-200.0	31.5-36.9	4.5-6.0	0
	2-4	75.0-200.0	31.5-36.9	4.5-6.0	0
	4-8	3.5-8.7	3.1-5.4	5.1-7.3	0
	8-10	3.5-8.7	2.4-5.4	5.6-7.8	0
	10-18	4.5-8.0	2.2-3.1	5.6-7.8	0
	18-29	4.5-8.0	2.2-3.1	5.6-7.8	0
	29-32	4.5-8.0	2.2-3.1	5.6-7.8	0
	32-41	4.5-8.0	2.2-3.1	5.6-7.8	0
	41-45	2.3-4.4	0.6-1.8	5.6-7.8	0
	45-50	2.3-4.4	0.6-1.8	5.6-7.8	0
	50-60	2.3-4.4	0.6-1.8	5.6-7.8	0
	60-70	2.3-4.4	0.6-1.8	5.6-7.8	0
Atherton, poorly drained-----	0-6	11.4-13.4	9.3-11.0	5.1-7.3	0
	6-12	4.9-9.0	0.4-11.4	5.6-7.8	0
	12-30	4.9-9.0	0.4-11.4	5.6-7.8	0
	30-40	5.3-6.7	2.3-10.2	5.6-7.8	0
	40-60	5.3-6.7	2.3-10.2	5.6-7.8	0
612738					
Fluvaquents, occasionally flooded	0-5	10.0-20.0	4.5-15.5	5.1-6.5	0
	5-12	10.0-20.0	5.0-13.1	5.1-6.5	0
	12-18	5.0-15.0	7.8-16.5	5.1-7.3	0
	18-24	5.0-15.0	7.8-16.5	5.1-7.3	0
	24-60	5.0-10.0	2.3-7.9	5.1-7.3	0
612753					
Wallpack, aeolian mantle, very stony--	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	3.4-12.6	0.3-9.3	3.5-5.5	0
	2-8	3.4-12.6	0.3-9.3	3.5-5.5	0
	8-14	2.2-7.0	0.3-4.1	3.5-5.5	0
	14-21	2.2-7.0	0.3-4.1	3.5-5.5	0
	21-26	2.2-7.0	0.3-4.1	3.5-5.5	0
	26-31	2.2-7.0	0.3-4.1	3.5-5.5	0
	31-36	2.2-7.0	0.3-4.1	3.5-5.5	0
	36-60	2.2-7.0	0.3-4.1	3.5-5.5	0
612756					
Wallpack, aeolian mantle, very stony--	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	3.4-12.6	0.3-9.3	3.5-5.5	0
	2-8	3.4-12.6	0.3-9.3	3.5-5.5	0
	8-14	2.2-7.0	0.3-4.1	3.5-5.5	0
	14-21	2.2-7.0	0.3-4.1	3.5-5.5	0
	21-26	2.2-7.0	0.3-4.1	3.5-5.5	0
	26-31	2.2-7.0	0.3-4.1	3.5-5.5	0
	31-36	2.2-7.0	0.3-4.1	3.5-5.5	0
	36-60	2.2-7.0	0.3-4.1	3.5-5.5	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 18.--Chemical Soil Properties--Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>
612757 Wallpack, aeolian mantle, very stony--	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	3.4-12.6	0.3-9.3	3.5-5.5	0
	2-8	3.4-12.6	0.3-9.3	3.5-5.5	0
	8-14	2.2-7.0	0.3-4.1	3.5-5.5	0
	14-21	2.2-7.0	0.3-4.1	3.5-5.5	0
	21-26	2.2-7.0	0.3-4.1	3.5-5.5	0
	26-31	2.2-7.0	0.3-4.1	3.5-5.5	0
	31-36	2.2-7.0	0.3-4.1	3.5-5.5	0
	36-60	2.2-7.0	0.3-4.1	3.5-5.5	0
612767 Wellsboro, extremely stony-----	0-8	4.5-8.0	3.1-5.4	3.5-5.5	0
	8-15	4.6-6.5	0.1-5.7	3.5-5.5	0
	15-24	4.6-6.5	0.1-5.7	3.5-5.5	0
	24-29	4.6-6.5	0.1-5.7	3.5-5.5	0
	29-37	4.0-10.0	0.0-2.3	3.5-5.5	0
	37-60	4.0-10.0	0.0-2.3	3.5-5.5	0
612768 Wellsboro, extremely stony-----	0-8	4.5-8.0	3.1-5.4	3.5-5.5	0
	8-15	4.6-6.5	0.1-5.7	3.5-5.5	0
	15-24	4.6-6.5	0.1-5.7	3.5-5.5	0
	24-29	4.6-6.5	0.1-5.7	3.5-5.5	0
	29-37	4.0-10.0	0.0-2.3	3.5-5.5	0
	37-60	4.0-10.0	0.0-2.3	3.5-5.5	0
613393 Alden, extremely stony-----	0-2	85.0-94.4	31.5-36.9	4.5-6.0	0
	2-7	3.5-8.7	3.1-8.0	4.5-7.3	0
	7-14	4.6-9.0	0.1-12.0	5.1-7.3	0
	14-28	4.6-9.0	0.1-12.0	5.6-7.3	0
	28-43	4.6-9.0	0.1-12.0	5.6-7.3	0
	43-60	4.6-9.0	0.1-12.0	6.1-8.4	0
613447 Unadilla-----	0-8	8.3-10.2	6.6-8.7	4.5-7.3	0
	8-14	8.3-10.2	6.6-8.7	4.5-7.3	0
	14-25	7.1-13.9	4.6-10.2	4.5-7.3	0
	25-39	7.1-13.9	4.6-10.2	4.5-7.3	0
	39-60	8.7-11.5	6.1-11.5	4.5-7.3	0
613448 Unadilla-----	0-8	8.3-10.2	6.6-8.7	4.5-7.3	0
	8-14	8.3-10.2	6.6-8.7	4.5-7.3	0
	14-25	7.1-13.9	4.6-10.2	4.5-7.3	0
	25-39	7.1-13.9	4.6-10.2	4.5-7.3	0
	39-60	8.7-11.5	6.1-11.5	4.5-7.3	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 18.--Chemical Soil Properties--Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>
614075 Wurtsboro, extremely stony-----	0-2	85.0-94.4	31.5-36.9	4.5-6.0	0
	2-3	5.9-13.4	3.1-11.1	3.5-5.5	0
	3-4	2.3-4.4	1.1-1.8	3.5-5.5	0
	4-6	7.8-14.8	3.6-5.9	3.5-5.5	0
	6-18	2.3-6.5	0.1-5.7	3.5-5.5	0
	18-24	2.3-6.5	0.1-5.7	3.5-5.5	0
	24-33	1.2-4.3	0.0-2.3	3.5-5.5	0
	33-60	1.2-4.3	0.0-2.3	3.5-5.5	0
Swartswood, extremely stony-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	5.9-13.4	3.1-11.1	3.5-5.5	0
	2-3	2.3-5.0	1.1-1.8	3.5-5.5	0
	3-4	7.8-14.8	3.6-5.9	3.5-5.5	0
	4-21	2.3-6.5	0.1-5.7	3.5-5.5	0
	21-32	1.2-4.3	0.0-2.3	3.5-5.5	0
	32-60	1.2-4.3	0.0-2.3	3.5-5.5	0
620179 Arnot, very rocky----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	5.9-13.4	3.1-11.1	3.5-6.0	0
	2-3	2.3-4.4	1.1-1.8	3.5-6.0	0
	3-4	7.8-14.8	3.6-5.9	3.5-6.0	0
	4-12	4.6-6.5	0.1-5.7	3.5-6.0	0
	12-17	4.6-6.5	0.1-5.7	3.5-6.0	0
	17-80	---	---	---	0
Lordstown, very rocky	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	5.9-13.4	3.1-11.1	4.5-6.0	0
	2-3	2.3-4.4	1.1-1.8	4.5-6.0	0
	3-5	4.6-6.5	0.1-5.7	4.5-6.0	0
	5-17	4.6-6.5	0.1-5.7	4.5-6.0	0
	17-22	4.6-6.5	0.1-5.7	4.5-6.0	0
	22-36	2.3-6.5	0.1-5.7	5.1-6.0	0
	36-80	---	---	---	0
620180 Arnot-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	5.9-13.4	3.1-11.1	3.5-6.0	0
	2-3	2.3-4.4	1.1-1.8	3.5-6.0	0
	3-4	7.8-14.8	3.6-5.9	3.5-6.0	0
	4-12	4.6-6.5	0.1-5.7	3.5-6.0	0
	12-17	4.6-6.5	0.1-5.7	3.5-6.0	0
	17-80	---	---	---	0
Lordstown-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	5.9-13.4	3.1-11.1	4.5-6.0	0
	2-3	2.3-4.4	1.1-1.8	4.5-6.0	0
	3-5	4.6-6.5	0.1-5.7	4.5-6.0	0
	5-17	4.6-6.5	0.1-5.7	4.5-6.0	0
	17-22	4.6-6.5	0.1-5.7	4.5-6.0	0
	22-36	2.3-6.5	0.1-5.7	5.1-6.0	0
	36-80	---	---	---	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 18.--Chemical Soil Properties--Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>
620181					
Arnot-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	5.9-13.4	3.1-11.1	3.5-6.0	0
	2-3	2.3-4.4	1.1-1.8	3.5-6.0	0
	3-4	7.8-14.8	3.6-5.9	3.5-6.0	0
	4-12	4.6-6.5	0.1-5.7	3.5-6.0	0
	12-17	4.6-6.5	0.1-5.7	3.5-6.0	0
	17-80	---	---	---	0
Lordstown-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	5.9-13.4	3.1-11.1	4.5-6.0	0
	2-3	2.3-4.4	1.1-1.8	4.5-6.0	0
	3-5	4.6-6.5	0.1-5.7	4.5-6.0	0
	5-17	4.6-6.5	0.1-5.7	4.5-6.0	0
	17-22	4.6-6.5	0.1-5.7	4.5-6.0	0
	22-36	2.3-6.5	0.1-5.7	5.1-6.0	0
	36-80	---	---	---	0
623089					
Chippewa, extremely stony-----	0-2	85.0-94.4	31.5-36.9	4.5-6.0	0
	2-4	10.9-15.1	4.4-11.1	4.5-6.5	0
	4-8	6.0-9.4	0.4-9.8	4.5-6.5	0
	8-13	4.6-15.4	0.9-12.0	4.5-6.5	0
	13-21	1.2-8.8	0.1-10.5	5.1-7.3	0
	21-29	1.2-8.8	0.1-10.5	5.1-7.3	0
	29-34	1.2-8.8	0.1-10.5	5.6-8.4	0
	34-60	1.2-8.8	0.1-10.5	5.6-8.4	0
623109					
Farmington-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-3	10.9-11.4	3.1-11.1	5.1-7.3	0
	3-9	4.4-15.4	0.0-4.8	5.1-7.8	0
	9-15	4.4-15.4	0.0-4.8	5.1-7.8	0
	15-80	---	---	---	0
624811					
Galway, very rocky---	0-2	85.0-94.4	31.5-36.9	4.5-6.0	0
	2-3	85.0-94.4	31.5-36.9	4.5-6.0	0
	3-5	9.5-14.3	0.0-4.5	5.0-7.3	0
	5-15	4.4-15.4	0.0-4.8	5.1-7.8	0
	15-24	4.4-15.4	0.0-4.8	5.1-7.8	0
	24-80	---	---	---	0
624813					
Lackawanna, extremely stony-----	0-2	85.0-94.4	31.5-36.9	4.5-6.0	0
	2-3	5.9-13.4	3.1-11.1	3.5-5.5	0
	3-7	2.3-4.4	1.1-1.8	3.5-5.5	0
	7-8	7.8-14.8	3.6-20.0	3.5-5.5	0
	8-16	4.6-6.5	0.1-5.7	3.5-5.5	0
	16-24	4.6-6.5	0.1-5.7	3.5-5.5	0
	24-29	1.2-4.3	0.0-2.3	3.5-5.5	0
	29-60	1.2-4.3	0.0-2.3	3.5-5.5	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 18.--Chemical Soil Properties--Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>
624816					
Lordstown, very rocky	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	5.9-13.4	3.1-11.1	4.5-6.0	0
	2-3	2.3-4.4	1.1-1.8	4.5-6.0	0
	3-5	4.6-6.5	0.1-5.7	4.5-6.0	0
	5-17	4.6-6.5	0.1-5.7	4.5-6.0	0
	17-22	4.6-6.5	0.1-5.7	4.5-6.0	0
	22-36	2.3-6.5	0.1-5.7	5.1-6.0	0
	36-80	---	---	---	0
Wallpack, very rocky	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	8.0-35.0	6.0-20.0	5.1-6.5	0
	2-5	6.0-9.4	0.0-3.9	5.1-6.5	0
	5-18	1.7-15.4	1.3-4.8	5.1-6.5	0
	18-24	1.2-8.8	0.6-5.3	5.6-7.3	0
	24-42	1.2-8.8	0.6-5.3	5.6-7.3	0
	42-60	1.2-8.8	0.6-5.3	5.6-7.8	0
624822					
Lordstown-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	5.9-13.4	3.1-11.1	4.5-6.0	0
	2-3	2.3-4.4	1.1-1.8	4.5-6.0	0
	3-5	4.6-6.5	0.1-5.7	4.5-6.0	0
	5-17	4.6-6.5	0.1-5.7	4.5-6.0	0
	17-22	4.6-6.5	0.1-5.7	4.5-6.0	0
	22-36	2.3-6.5	0.1-5.7	5.1-6.0	0
	36-80	---	---	---	0
Wallpack-----	0-3	3.5-11.4	3.1-5.4	5.1-6.5	0
	3-9	3.5-11.4	3.1-5.4	5.1-6.5	0
	9-16	1.7-15.4	1.3-4.8	5.1-6.5	0
	16-25	1.2-8.8	0.6-5.3	5.6-7.3	0
	25-65	1.2-8.8	0.6-5.3	5.6-7.8	0
624823					
Lordstown-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	5.9-13.4	3.1-11.1	4.5-6.0	0
	2-3	2.3-4.4	1.1-1.8	4.5-6.0	0
	3-5	4.6-6.5	0.1-5.7	4.5-6.0	0
	5-17	4.6-6.5	0.1-5.7	4.5-6.0	0
	17-22	4.6-6.5	0.1-5.7	4.5-6.0	0
	22-36	2.3-6.5	0.1-5.7	5.1-6.0	0
	36-80	---	---	---	0
Wallpack-----	0-3	3.5-11.4	3.1-5.4	5.1-6.5	0
	3-9	3.5-11.4	3.1-5.4	5.1-6.5	0
	9-16	1.7-15.4	1.3-4.8	5.1-6.5	0
	16-25	1.2-8.8	0.6-5.3	5.6-7.3	0
	25-65	1.2-8.8	0.6-5.3	5.6-7.8	0
624824					
Lordstown-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	5.9-13.4	3.1-11.1	4.5-6.0	0
	2-3	2.3-4.4	1.1-1.8	4.5-6.0	0
	3-5	4.6-6.5	0.1-5.7	4.5-6.0	0
	5-17	4.6-6.5	0.1-5.7	4.5-6.0	0
	17-22	4.6-6.5	0.1-5.7	4.5-6.0	0
	22-36	2.3-6.5	0.1-5.7	5.1-6.0	0
	36-80	---	---	---	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 18.--Chemical Soil Properties--Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>
624824					
Wallpack-----	0-3	3.5-11.4	3.1-5.4	5.1-6.5	0
	3-9	3.5-11.4	3.1-5.4	5.1-6.5	0
	9-16	1.7-15.4	1.3-4.8	5.1-6.5	0
	16-25	1.2-8.8	0.6-5.3	5.6-7.3	0
	25-65	1.2-8.8	0.6-5.3	5.6-7.8	0
624826					
Manlius, very rocky--	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	3.5-8.7	3.1-5.4	3.5-7.3	0
	2-18	4.6-6.5	2.5-2.7	3.5-6.5	0
	18-27	4.6-6.5	2.5-2.7	4.5-6.5	0
	27-80	---	---	---	0
Nassau, very rocky---	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	3.5-8.7	3.1-5.4	4.5-7.3	0
	2-15	4.6-6.5	2.5-2.7	4.5-6.5	0
	15-80	---	---	---	0
624827					
Nassau, very rocky---	0-7	3.5-8.7	3.1-5.4	4.5-7.3	0
	7-13	4.6-6.5	2.5-2.7	4.5-6.5	0
	13-80	---	---	---	0
Manlius, very rocky--	0-9	3.5-8.7	3.1-5.4	3.5-7.3	0
	9-20	4.6-6.5	2.5-2.7	3.5-6.5	0
	20-29	4.6-6.5	2.5-2.7	4.5-6.5	0
	29-80	---	---	---	0
624828					
Nassau, very rocky---	0-7	3.5-8.7	3.1-5.4	4.5-7.3	0
	7-13	4.6-6.5	2.5-2.7	4.5-6.5	0
	13-80	---	---	---	0
Manlius, very rocky--	0-9	3.5-8.7	3.1-5.4	3.5-7.3	0
	9-20	4.6-6.5	2.5-2.7	3.5-6.5	0
	20-29	4.6-6.5	2.5-2.7	4.5-6.5	0
	29-80	---	---	---	0
624829					
Nassau, very rocky---	0-7	3.5-8.7	3.1-5.4	4.5-7.3	0
	7-13	4.6-6.5	2.5-2.7	4.5-6.5	0
	13-80	---	---	---	0
Manlius, very rocky--	0-9	3.5-8.7	3.1-5.4	3.5-7.3	0
	9-20	4.6-6.5	2.5-2.7	3.5-6.5	0
	20-29	4.6-6.5	2.5-2.7	4.5-6.5	0
	29-80	---	---	---	0
624832					
Nassau-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	3.5-8.7	3.1-5.4	4.5-7.3	0
	2-15	4.6-6.5	2.5-2.7	4.5-6.5	0
	15-80	---	---	---	0
624841					
Oquaga-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-4	5.9-13.4	3.1-11.1	3.5-5.5	0
	4-20	4.6-6.5	0.1-5.7	3.5-5.5	0
	20-25	2.3-6.5	0.1-5.7	3.5-5.5	0
	25-80	---	---	---	0



# Soil Survey of Delaware Water Gap National Recreation Area

Table 18.--Chemical Soil Properties--Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>
624845					
Farmington-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-3	10.9-11.4	3.1-11.1	5.1-7.3	0
	3-9	4.4-15.4	0.0-4.8	5.1-7.8	0
	9-15	4.4-15.4	0.0-4.8	5.1-7.8	0
	15-80	---	---	---	0
Galway-----	0-2	85.0-94.4	31.5-36.9	4.5-6.0	0
	2-3	85.0-94.4	31.5-36.9	4.5-6.0	0
	3-5	9.5-14.3	0.0-4.5	5.0-7.3	0
	5-15	4.4-15.4	0.0-4.8	5.1-7.8	0
	15-24	4.4-15.4	0.0-4.8	5.1-7.8	0
	24-80	---	---	---	0
624846					
Arnot-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	5.9-13.4	3.1-11.1	3.5-6.0	0
	2-3	2.3-4.4	1.1-1.8	3.5-6.0	0
	3-4	7.8-14.8	3.6-5.9	3.5-6.0	0
	4-12	4.6-6.5	0.1-5.7	3.5-6.0	0
	12-17	4.6-6.5	0.1-5.7	3.5-6.0	0
	17-80	---	---	---	0
626816					
Udifluvents, occasionally flooded	0-3	---	1.6-8.2	4.5-6.0	0
	3-16	1.4-9.9	1.1-7.4	5.0-6.0	0
	16-22	1.4-14.2	1.1-10.7	5.0-6.0	0
	22-27	1.4-14.2	1.1-10.7	5.0-6.0	0
	27-32	1.4-14.2	1.1-10.7	5.0-6.0	0
	32-60	1.4-9.9	1.1-7.4	5.0-6.0	0
635458					
Oquaga, very rocky---	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-4	5.9-13.4	3.1-11.1	3.5-5.5	0
	4-20	4.6-6.5	0.1-5.7	3.5-5.5	0
	20-25	2.3-6.5	0.1-5.7	3.5-5.5	0
	25-80	---	---	---	0
Lackawanna, very rocky-----	0-2	85.0-94.4	31.5-36.9	4.5-6.0	0
	2-3	5.9-13.4	3.1-11.1	3.5-5.5	0
	3-7	2.3-4.4	1.1-1.8	3.5-5.5	0
	7-8	7.8-14.8	3.6-20.0	3.5-5.5	0
	8-16	4.6-6.5	0.1-5.7	3.5-5.5	0
	16-24	4.6-6.5	0.1-5.7	3.5-5.5	0
	24-29	1.2-4.3	0.0-2.3	3.5-5.5	0
	29-60	1.2-4.3	0.0-2.3	3.5-5.5	0
635459					
Oquaga, very rocky---	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-4	5.9-13.4	3.1-11.1	3.5-5.5	0
	4-20	4.6-6.5	0.1-5.7	3.5-5.5	0
	20-25	2.3-6.5	0.1-5.7	3.5-5.5	0
	25-80	---	---	---	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 18.--Chemical Soil Properties--Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>
635459 Lackawanna, very rocky-----	0-2	85.0-94.4	31.5-36.9	4.5-6.0	0
	2-3	5.9-13.4	3.1-11.1	3.5-5.5	0
	3-7	2.3-4.4	1.1-1.8	3.5-5.5	0
	7-8	7.8-14.8	3.6-20.0	3.5-5.5	0
	8-16	4.6-6.5	0.1-5.7	3.5-5.5	0
	16-24	4.6-6.5	0.1-5.7	3.5-5.5	0
	24-29	1.2-4.3	0.0-2.3	3.5-5.5	0
	29-60	1.2-4.3	0.0-2.3	3.5-5.5	0
740953 Delaware, rarely flooded-----	0-1	85.0-94.4	31.5-36.9	5.1-6.5	0
	1-4	3.4-12.6	0.3-9.3	5.1-6.5	0
	4-11	3.4-12.6	0.3-9.3	5.1-6.5	0
	11-20	2.2-7.0	0.3-4.1	5.1-6.5	0
	20-33	2.2-7.0	0.3-4.1	5.1-6.5	0
	33-41	2.2-7.0	0.3-4.1	5.1-6.5	0
	41-56	1.3-3.7	1.0-4.2	5.1-6.5	0
	56-60	1.3-3.7	1.0-4.2	5.1-6.5	0
740968 Nassau, very rocky---	0-7	3.5-8.7	3.1-5.4	4.5-7.3	0
	7-13	4.6-6.5	2.5-2.7	4.5-6.5	0
	13-80	---	---	---	0
Manlius, very rocky--	0-9	3.5-8.7	3.1-5.4	3.5-7.3	0
	9-20	4.6-6.5	2.5-2.7	3.5-6.5	0
	20-29	4.6-6.5	2.5-2.7	4.5-6.5	0
	29-80	---	---	---	0
740969 Nassau, very rocky---	0-7	3.5-8.7	3.1-5.4	4.5-7.3	0
	7-13	4.6-6.5	2.5-2.7	4.5-6.5	0
	13-80	---	---	---	0
Manlius, very rocky--	0-9	3.5-8.7	3.1-5.4	3.5-7.3	0
	9-20	4.6-6.5	2.5-2.7	3.5-6.5	0
	20-29	4.6-6.5	2.5-2.7	4.5-6.5	0
	29-80	---	---	---	0
740971 Oquaga, very rocky---	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-4	5.9-13.4	3.1-11.1	3.5-5.5	0
	4-20	4.6-6.5	0.1-5.7	3.5-5.5	0
	20-25	2.3-6.5	0.1-5.7	3.5-5.5	0
	25-80	---	---	---	0
Lackawanna, very rocky-----	0-2	85.0-94.4	31.5-36.9	4.5-6.0	0
	2-3	5.9-13.4	3.1-11.1	3.5-5.5	0
	3-7	2.3-4.4	1.1-1.8	3.5-5.5	0
	7-8	7.8-14.8	3.6-20.0	3.5-5.5	0
	8-16	4.6-6.5	0.1-5.7	3.5-5.5	0
	16-24	4.6-6.5	0.1-5.7	3.5-5.5	0
	24-29	1.2-4.3	0.0-2.3	3.5-5.5	0
	29-60	1.2-4.3	0.0-2.3	3.5-5.5	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 18.--Chemical Soil Properties--Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>
740972					
Oquaga, very rocky---	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-4	5.9-13.4	3.1-11.1	3.5-5.5	0
	4-20	4.6-6.5	0.1-5.7	3.5-5.5	0
	20-25	2.3-6.5	0.1-5.7	3.5-5.5	0
	25-80	---	---	---	0
Lackawanna, very rocky-----	0-2	85.0-94.4	31.5-36.9	4.5-6.0	0
	2-3	5.9-13.4	3.1-11.1	3.5-5.5	0
	3-7	2.3-4.4	1.1-1.8	3.5-5.5	0
	7-8	7.8-14.8	3.6-20.0	3.5-5.5	0
	8-16	4.6-6.5	0.1-5.7	3.5-5.5	0
	16-24	4.6-6.5	0.1-5.7	3.5-5.5	0
	24-29	1.2-4.3	0.0-2.3	3.5-5.5	0
	29-60	1.2-4.3	0.0-2.3	3.5-5.5	0
740974					
Oquaga-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-4	5.9-13.4	3.1-11.1	3.5-5.5	0
	4-20	4.6-6.5	0.1-5.7	3.5-5.5	0
	20-25	2.3-6.5	0.1-5.7	3.5-5.5	0
	25-80	---	---	---	0
740975					
Arnot-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	5.9-13.4	3.1-11.1	3.5-6.0	0
	2-3	2.3-4.4	1.1-1.8	3.5-6.0	0
	3-4	7.8-14.8	3.6-5.9	3.5-6.0	0
	4-12	4.6-6.5	0.1-5.7	3.5-6.0	0
	12-17	4.6-6.5	0.1-5.7	3.5-6.0	0
	17-80	---	---	---	0
740987					
Scio-----	0-6	8.3-10.2	6.6-8.7	3.5-6.0	0
	6-13	8.3-10.2	6.6-8.7	3.5-6.0	0
	13-23	7.1-13.9	4.6-10.2	3.5-6.0	0
	23-28	7.1-13.9	4.6-10.2	3.5-6.0	0
	28-50	7.1-13.9	4.6-10.2	3.5-6.0	0
	50-59	8.7-11.5	6.1-11.5	5.1-7.8	0
	59-72	8.7-11.5	6.1-11.5	5.1-7.8	0
740988					
Udifluvents, occasionally flooded	0-3	---	1.6-8.2	4.5-6.0	0
	3-16	1.4-9.9	1.1-7.4	5.0-6.0	0
	16-22	1.4-14.2	1.1-10.7	5.0-6.0	0
	22-27	1.4-14.2	1.1-10.7	5.0-6.0	0
	27-32	1.4-14.2	1.1-10.7	5.0-6.0	0
	32-60	1.4-9.9	1.1-7.4	5.0-6.0	0
740991					
Unadilla-----	0-8	8.3-10.2	6.6-8.7	4.5-7.3	0
	8-14	8.3-10.2	6.6-8.7	4.5-7.3	0
	14-25	7.1-13.9	4.6-10.2	4.5-7.3	0
	25-39	7.1-13.9	4.6-10.2	4.5-7.3	0
	39-60	8.7-11.5	6.1-11.5	4.5-7.3	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 18.--Chemical Soil Properties--Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>
740992					
Unadilla-----	0-8	8.3-10.2	6.6-8.7	4.5-7.3	0
	8-14	8.3-10.2	6.6-8.7	4.5-7.3	0
	14-25	7.1-13.9	4.6-10.2	4.5-7.3	0
	25-39	7.1-13.9	4.6-10.2	4.5-7.3	0
	39-60	8.7-11.5	6.1-11.5	4.5-7.3	0
740995					
Wellsboro, extremely stony-----	0-8	4.5-8.0	3.1-5.4	3.5-5.5	0
	8-15	4.6-6.5	0.1-5.7	3.5-5.5	0
	15-24	4.6-6.5	0.1-5.7	3.5-5.5	0
	24-29	4.6-6.5	0.1-5.7	3.5-5.5	0
	29-37	4.0-10.0	0.0-2.3	3.5-5.5	0
	37-60	4.0-10.0	0.0-2.3	3.5-5.5	0
740996					
Wellsboro, extremely stony-----	0-8	4.5-8.0	3.1-5.4	3.5-5.5	0
	8-15	4.6-6.5	0.1-5.7	3.5-5.5	0
	15-24	4.6-6.5	0.1-5.7	3.5-5.5	0
	24-29	4.6-6.5	0.1-5.7	3.5-5.5	0
	29-37	4.0-10.0	0.0-2.3	3.5-5.5	0
	37-60	4.0-10.0	0.0-2.3	3.5-5.5	0
741149					
Lackawanna, extremely stony----	0-2	85.0-94.4	31.5-36.9	4.5-6.0	0
	2-3	5.9-13.4	3.1-11.1	3.5-5.5	0
	3-7	2.3-4.4	1.1-1.8	3.5-5.5	0
	7-8	7.8-14.8	3.6-20.0	3.5-5.5	0
	8-16	4.6-6.5	0.1-5.7	3.5-5.5	0
	16-24	4.6-6.5	0.1-5.7	3.5-5.5	0
	24-29	1.2-4.3	0.0-2.3	3.5-5.5	0
	29-60	1.2-4.3	0.0-2.3	3.5-5.5	0
741150					
Lackawanna, extremely stony----	0-2	85.0-94.4	31.5-36.9	4.5-6.0	0
	2-3	5.9-13.4	3.1-11.1	3.5-5.5	0
	3-7	2.3-4.4	1.1-1.8	3.5-5.5	0
	7-8	7.8-14.8	3.6-20.0	3.5-5.5	0
	8-16	4.6-6.5	0.1-5.7	3.5-5.5	0
	16-24	4.6-6.5	0.1-5.7	3.5-5.5	0
	24-29	1.2-4.3	0.0-2.3	3.5-5.5	0
	29-60	1.2-4.3	0.0-2.3	3.5-5.5	0
801114					
Oquaga-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-4	5.9-13.4	3.1-11.1	3.5-5.5	0
	4-20	4.6-6.5	0.1-5.7	3.5-5.5	0
	20-25	2.3-6.5	0.1-5.7	3.5-5.5	0
	25-80	---	---	---	0
810906					
Oquaga-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-4	5.9-13.4	3.1-11.1	3.5-5.5	0
	4-20	4.6-6.5	0.1-5.7	3.5-5.5	0
	20-25	2.3-6.5	0.1-5.7	3.5-5.5	0
	25-80	---	---	---	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 18.--Chemical Soil Properties--Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>
1147465 Alden, extremely stony-----	0-2	85.0-94.4	31.5-36.9	4.5-6.0	0
	2-7	3.5-8.7	3.1-8.0	4.5-7.3	0
	7-14	4.6-9.0	0.1-12.0	5.1-7.3	0
	14-28	4.6-9.0	0.1-12.0	5.6-7.3	0
	28-43	4.6-9.0	0.1-12.0	5.6-7.3	0
	43-60	4.6-9.0	0.1-12.0	6.1-8.4	0
1147467 Arnot, very rocky----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	5.9-13.4	3.1-11.1	3.5-6.0	0
	2-3	2.3-4.4	1.1-1.8	3.5-6.0	0
	3-4	7.8-14.8	3.6-5.9	3.5-6.0	0
	4-12	4.6-6.5	0.1-5.7	3.5-6.0	0
	12-17	4.6-6.5	0.1-5.7	3.5-6.0	0
	17-80	---	---	---	0
Lordstown, very rocky	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	5.9-13.4	3.1-11.1	4.5-6.0	0
	2-3	2.3-4.4	1.1-1.8	4.5-6.0	0
	3-5	4.6-6.5	0.1-5.7	4.5-6.0	0
	5-17	4.6-6.5	0.1-5.7	4.5-6.0	0
	17-22	4.6-6.5	0.1-5.7	4.5-6.0	0
	22-36	2.3-6.5	0.1-5.7	5.1-6.0	0
	36-80	---	---	---	0
1147468 Arnot-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	5.9-13.4	3.1-11.1	3.5-6.0	0
	2-3	2.3-4.4	1.1-1.8	3.5-6.0	0
	3-4	7.8-14.8	3.6-5.9	3.5-6.0	0
	4-12	4.6-6.5	0.1-5.7	3.5-6.0	0
	12-17	4.6-6.5	0.1-5.7	3.5-6.0	0
	17-80	---	---	---	0
Lordstown-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	5.9-13.4	3.1-11.1	4.5-6.0	0
	2-3	2.3-4.4	1.1-1.8	4.5-6.0	0
	3-5	4.6-6.5	0.1-5.7	4.5-6.0	0
	5-17	4.6-6.5	0.1-5.7	4.5-6.0	0
	17-22	4.6-6.5	0.1-5.7	4.5-6.0	0
	22-36	2.3-6.5	0.1-5.7	5.1-6.0	0
	36-80	---	---	---	0
1147469 Arnot-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	5.9-13.4	3.1-11.1	3.5-6.0	0
	2-3	2.3-4.4	1.1-1.8	3.5-6.0	0
	3-4	7.8-14.8	3.6-5.9	3.5-6.0	0
	4-12	4.6-6.5	0.1-5.7	3.5-6.0	0
	12-17	4.6-6.5	0.1-5.7	3.5-6.0	0
	17-80	---	---	---	0
Lordstown-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	5.9-13.4	3.1-11.1	4.5-6.0	0
	2-3	2.3-4.4	1.1-1.8	4.5-6.0	0
	3-5	4.6-6.5	0.1-5.7	4.5-6.0	0
	5-17	4.6-6.5	0.1-5.7	4.5-6.0	0
	17-22	4.6-6.5	0.1-5.7	4.5-6.0	0
	22-36	2.3-6.5	0.1-5.7	5.1-6.0	0
	36-80	---	---	---	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 18.--Chemical Soil Properties--Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>
1147470 Atherton, very poorly drained-----	0-2	75.0-200.0	31.5-36.9	4.5-6.0	0
	2-4	75.0-200.0	31.5-36.9	4.5-6.0	0
	4-8	3.5-8.7	3.1-5.4	5.1-7.3	0
	8-10	3.5-8.7	2.4-5.4	5.6-7.8	0
	10-18	4.5-8.0	2.2-3.1	5.6-7.8	0
	18-29	4.5-8.0	2.2-3.1	5.6-7.8	0
	29-32	4.5-8.0	2.2-3.1	5.6-7.8	0
	32-41	4.5-8.0	2.2-3.1	5.6-7.8	0
	41-45	2.3-4.4	0.6-1.8	5.6-7.8	0
	45-50	2.3-4.4	0.6-1.8	5.6-7.8	0
	50-60	2.3-4.4	0.6-1.8	5.6-7.8	0
	60-70	2.3-4.4	0.6-1.8	5.6-7.8	0
Atherton, poorly drained-----	0-6	11.4-13.4	9.3-11.0	5.1-7.3	0
	6-12	4.9-9.0	0.4-11.4	5.6-7.8	0
	12-30	4.9-9.0	0.4-11.4	5.6-7.8	0
	30-40	5.3-6.7	2.3-10.2	5.6-7.8	0
	40-60	5.3-6.7	2.3-10.2	5.6-7.8	0
1147471 Catden-----	0-2	102.1-146.7	---	4.5-7.3	0
	2-13	102.1-146.7	---	4.5-7.3	0
	13-20	102.1-146.7	---	4.5-7.3	0
	20-32	102.1-146.7	---	4.5-7.3	0
	32-60	102.1-146.7	---	4.5-7.3	0
1147474 Chippewa, extremely stony-----	0-2	85.0-94.4	31.5-36.9	4.5-6.0	0
	2-4	10.9-15.1	4.4-11.1	4.5-6.5	0
	4-8	6.0-9.4	0.4-9.8	4.5-6.5	0
	8-13	4.6-15.4	0.9-12.0	4.5-6.5	0
	13-21	1.2-8.8	0.1-10.5	5.1-7.3	0
	21-29	1.2-8.8	0.1-10.5	5.1-7.3	0
	29-34	1.2-8.8	0.1-10.5	5.6-8.4	0
	34-60	1.2-8.8	0.1-10.5	5.6-8.4	0
1147475 Colonie-----	0-2	3.5-7.7	0.0-3.3	5.1-6.5	0
	2-11	3.5-7.7	0.0-3.3	5.1-6.5	0
	11-24	0.6-3.8	0.0-8.7	5.1-6.5	0
	24-40	0.6-3.8	0.0-8.7	5.1-7.3	0
	40-62	0.6-3.8	0.0-8.7	5.1-7.3	0
1147478 Delaware, rarely flooded-----	0-1	85.0-94.4	31.5-36.9	5.1-6.5	0
	1-4	3.4-12.6	0.3-9.3	5.1-6.5	0
	4-11	3.4-12.6	0.3-9.3	5.1-6.5	0
	11-20	2.2-7.0	0.3-4.1	5.1-6.5	0
	20-33	2.2-7.0	0.3-4.1	5.1-6.5	0
	33-41	2.2-7.0	0.3-4.1	5.1-6.5	0
	41-56	1.3-3.7	1.0-4.2	5.1-6.5	0
	56-60	1.3-3.7	1.0-4.2	5.1-6.5	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 18.--Chemical Soil Properties--Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>
1147482					
Fredon, very stony---	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-8	3.5-8.7	3.1-8.0	5.1-7.3	0
	8-14	2.3-6.5	0.1-5.7	5.1-7.3	0
	14-18	2.3-6.5	0.1-5.7	5.1-7.3	0
	18-23	2.3-6.5	0.1-5.7	5.1-7.3	0
	23-31	0.6-3.6	0.0-3.2	5.6-8.4	0
	31-36	0.6-3.6	0.0-3.2	5.6-8.4	0
	36-45	0.6-3.6	0.0-3.2	5.6-8.4	0
	45-55	0.6-3.6	0.0-3.2	5.6-8.4	0
	55-60	0.6-3.6	0.0-3.2	5.6-8.4	0
Halsey, very stony---	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-5	3.5-8.7	3.1-8.0	5.1-7.3	0
	5-11	3.5-8.7	3.1-8.0	5.1-7.3	0
	11-20	2.3-6.5	0.1-5.7	5.1-7.3	0
	20-25	0.6-3.6	0.0-3.2	5.6-8.4	0
	25-35	0.6-3.6	0.0-3.2	5.6-8.4	0
	35-49	0.6-3.6	0.0-3.2	5.6-8.4	0
	49-56	0.6-3.6	0.0-3.2	5.6-8.4	0
	56-60	0.6-3.6	0.0-3.2	5.6-8.4	0
1147485					
Hazen, very stony----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-10	5.9-9.0	3.1-8.4	5.6-6.5	0
	10-18	5.4-7.4	2.3-3.9	5.6-6.5	0
	18-29	0.6-3.6	0.0-3.2	6.1-7.8	0
	29-41	0.6-3.6	0.0-3.2	6.1-7.8	0
	41-60	0.6-3.6	0.0-3.2	6.1-7.8	0
Hoosic, very stony---	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-9	5.9-9.0	3.1-8.4	4.5-5.5	0
	9-21	5.4-7.4	2.3-3.9	4.5-5.5	0
	21-27	0.6-3.6	0.0-3.2	4.5-6.0	0
	27-37	0.6-3.6	0.0-3.2	4.5-6.0	0
	37-49	0.6-3.6	0.0-3.2	4.5-6.0	0
	49-60	0.6-3.6	0.0-3.2	4.5-6.0	0
1147490					
Hoosic, very stony---	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-9	5.9-9.0	3.1-8.4	4.5-5.5	0
	9-21	5.4-7.4	2.3-3.9	4.5-5.5	0
	21-27	0.6-3.6	0.0-3.2	4.5-6.0	0
	27-37	0.6-3.6	0.0-3.2	4.5-6.0	0
	37-49	0.6-3.6	0.0-3.2	4.5-6.0	0
	49-60	0.6-3.6	0.0-3.2	4.5-6.0	0
Hazen, very stony----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-10	5.9-9.0	3.1-8.4	5.6-6.5	0
	10-18	5.4-7.4	2.3-3.9	5.6-6.5	0
	18-29	0.6-3.6	0.0-3.2	6.1-7.8	0
	29-41	0.6-3.6	0.0-3.2	6.1-7.8	0
	41-60	0.6-3.6	0.0-3.2	6.1-7.8	0
1147491					
Hoosic, very stony---	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-9	5.9-9.0	3.1-8.4	4.5-5.5	0
	9-21	5.4-7.4	2.3-3.9	4.5-5.5	0
	21-27	0.6-3.6	0.0-3.2	4.5-6.0	0
	27-37	0.6-3.6	0.0-3.2	4.5-6.0	0
	37-49	0.6-3.6	0.0-3.2	4.5-6.0	0
	49-60	0.6-3.6	0.0-3.2	4.5-6.0	0

# Soil Survey of Delaware Water Gap National Recreation Area

Table 18.--Chemical Soil Properties--Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>
1147491					
Otisville, very stony	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	5.7-9.1	2.7-9.2	3.5-6.5	0
	2-7	0.6-3.8	0.0-3.2	3.5-6.5	0
	7-11	0.6-3.6	0.0-3.2	3.5-6.5	0
	11-19	0.6-3.6	0.0-3.2	3.5-6.5	0
	19-31	0.6-3.6	0.0-3.2	4.5-6.0	0
	31-43	0.6-3.6	0.0-3.2	4.5-6.0	0
	43-60	0.6-3.6	0.0-3.2	4.5-6.0	0
1147492					
Lackawanna, extremely stony-----	0-2	85.0-94.4	31.5-36.9	4.5-6.0	0
	2-3	5.9-13.4	3.1-11.1	3.5-5.5	0
	3-7	2.3-4.4	1.1-1.8	3.5-5.5	0
	7-8	7.8-14.8	3.6-20.0	3.5-5.5	0
	8-16	4.6-6.5	0.1-5.7	3.5-5.5	0
	16-24	4.6-6.5	0.1-5.7	3.5-5.5	0
	24-29	1.2-4.3	0.0-2.3	3.5-5.5	0
	29-60	1.2-4.3	0.0-2.3	3.5-5.5	0
1147500					
Wurtsboro, extremely stony-----	0-2	85.0-94.4	31.5-36.9	4.5-6.0	0
	2-3	5.9-13.4	3.1-11.1	3.5-5.5	0
	3-5	2.3-4.4	1.1-1.8	3.5-5.5	0
	5-6	7.8-14.8	3.6-5.9	3.5-5.5	0
	6-18	2.3-6.5	0.1-5.7	3.5-5.5	0
	18-24	2.3-6.5	0.1-5.7	3.5-5.5	0
	24-30	1.2-4.3	0.0-2.3	3.5-5.5	0
	30-60	1.2-4.3	0.0-2.3	3.5-5.5	0
1147501					
Wurtsboro, extremely stony-----	0-2	85.0-94.4	31.5-36.9	4.5-6.0	0
	2-3	5.9-13.4	3.1-11.1	3.5-5.5	0
	3-4	2.3-4.4	1.1-1.8	3.5-5.5	0
	4-6	7.8-14.8	3.6-5.9	3.5-5.5	0
	6-18	2.3-6.5	0.1-5.7	3.5-5.5	0
	18-24	2.3-6.5	0.1-5.7	3.5-5.5	0
	24-33	1.2-4.3	0.0-2.3	3.5-5.5	0
	33-60	1.2-4.3	0.0-2.3	3.5-5.5	0
Swartswood, extremely stony-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	5.9-13.4	3.1-11.1	3.5-5.5	0
	2-3	2.3-5.0	1.1-1.8	3.5-5.5	0
	3-4	7.8-14.8	3.6-5.9	3.5-5.5	0
	4-21	2.3-6.5	0.1-5.7	3.5-5.5	0
	21-32	1.2-4.3	0.0-2.3	3.5-5.5	0
	32-60	1.2-4.3	0.0-2.3	3.5-5.5	0
1147502					
Wurtsboro, extremely stony-----	0-2	85.0-94.4	31.5-36.9	4.5-6.0	0
	2-3	5.9-13.4	3.1-11.1	3.5-5.5	0
	3-4	2.3-4.4	1.1-1.8	3.5-5.5	0
	4-6	7.8-14.8	3.6-5.9	3.5-5.5	0
	6-18	2.3-6.5	0.1-5.7	3.5-5.5	0
	18-24	2.3-6.5	0.1-5.7	3.5-5.5	0
	24-33	1.2-4.3	0.0-2.3	3.5-5.5	0
	33-60	1.2-4.3	0.0-2.3	3.5-5.5	0



# Soil Survey of Delaware Water Gap National Recreation Area

Table 18.--Chemical Soil Properties--Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>
1147502 Swartswood, extremely stony-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	5.9-13.4	3.1-11.1	3.5-5.5	0
	2-3	2.3-5.0	1.1-1.8	3.5-5.5	0
	3-4	7.8-14.8	3.6-5.9	3.5-5.5	0
	4-21	2.3-6.5	0.1-5.7	3.5-5.5	0
	21-32	1.2-4.3	0.0-2.3	3.5-5.5	0
	32-60	1.2-4.3	0.0-2.3	3.5-5.5	0
1147527 Udorthents-----	0-12	5.9-20.0	3.1-8.4	5.0-6.0	0
	12-72	0.6-3.6	0.0-3.2	5.1-5.5	0
1147532 Udorthents-----	0-12	5.9-20.0	3.1-8.4	5.0-6.0	0
	12-72	0.6-3.6	0.0-3.2	5.1-5.5	0
1147533 Wurtsboro, extremely stony-----	0-2	85.0-94.4	31.5-36.9	4.5-6.0	0
	2-3	5.9-13.4	3.1-11.1	3.5-5.5	0
	3-4	2.3-4.4	1.1-1.8	3.5-5.5	0
	4-6	7.8-14.8	3.6-5.9	3.5-5.5	0
	6-18	2.3-6.5	0.1-5.7	3.5-5.5	0
	18-24	2.3-6.5	0.1-5.7	3.5-5.5	0
	24-33	1.2-4.3	0.0-2.3	3.5-5.5	0
	33-60	1.2-4.3	0.0-2.3	3.5-5.5	0
Swartswood, extremely stony-----	0-1	85.0-94.4	31.5-36.9	4.5-6.0	0
	1-2	5.9-13.4	3.1-11.1	3.5-5.5	0
	2-3	2.3-5.0	1.1-1.8	3.5-5.5	0
	3-4	7.8-14.8	3.6-5.9	3.5-5.5	0
	4-21	2.3-6.5	0.1-5.7	3.5-5.5	0
	21-32	1.2-4.3	0.0-2.3	3.5-5.5	0
	32-60	1.2-4.3	0.0-2.3	3.5-5.5	0
1948749 Arnot-----	0-8	12.0-22.0	3.9-8.1	4.2-6.6	0
	8-16	3.0-13.0	1.6-5.1	3.6-6.0	0
	16-26	---	---	---	0
1948750 Arnot-----	0-8	12.0-22.0	3.9-8.1	4.2-6.6	0
	8-16	3.0-13.0	1.6-5.1	3.6-6.0	0
	16-26	---	---	---	0
1948751 Arnot-----	0-8	12.0-22.0	3.9-8.1	4.2-6.6	0
	8-16	3.0-13.0	1.6-5.1	3.6-6.0	0
	16-26	---	---	---	0
1948774 Conotton-----	0-9	8.0-16.0	---	4.5-6.5	0
	9-45	3.0-12.0	---	4.5-7.3	0
	45-80	2.0-10.0	---	5.6-7.8	0-10
1948775 Conotton-----	0-9	8.0-16.0	---	4.5-6.5	0
	9-45	3.0-12.0	---	4.5-7.3	0
	45-80	2.0-10.0	---	5.6-7.8	0-10

# Soil Survey of Delaware Water Gap National Recreation Area

Table 18.--Chemical Soil Properties--Continued

Map unit symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	<i>In</i>	<i>meq/100 g</i>	<i>meq/100 g</i>	<i>pH</i>	<i>Pct</i>
1948776 Conotton-----	0-9	8.0-16.0	---	4.5-6.5	0
	9-45	3.0-12.0	---	4.5-7.3	0
	45-80	2.0-10.0	---	5.6-7.8	0-10
1948777 Conotton-----	0-9	8.0-16.0	---	4.5-6.5	0
	9-45	3.0-12.0	---	4.5-7.3	0
	45-80	2.0-10.0	---	5.6-7.8	0-10
1948797 Manlius-----	0-8	12.0-25.0	2.0-7.4	4.2-6.6	0
	8-24	3.0-13.0	1.2-4.4	3.6-6.0	0
	24-32	2.0-9.0	---	4.5-6.5	0
	32-40	---	---	---	0
1948802 Manlius-----	0-8	12.0-25.0	2.0-7.4	4.2-6.6	0
	8-24	3.0-13.0	1.2-4.4	3.6-6.0	0
	24-32	2.0-9.0	---	4.5-6.5	0
	32-40	---	---	---	0
1948818 Manlius-----	0-8	12.0-25.0	2.0-7.4	4.2-6.6	0
	8-24	3.0-13.0	1.2-4.4	3.6-6.0	0
	24-32	2.0-9.0	---	4.5-6.5	0
	32-40	---	---	---	0
1948832 Penargyl-----	0-12	10.0-20.0	---	4.5-7.3	0
	12-74	10.0-15.0	---	4.5-6.5	0
	74-80	10.0-15.0	3.6-6.8	4.5-6.0	0
	80-90	---	---	---	0
1948846 Phelps-----	0-10	5.5-15.4	---	5.6-7.3	0
	10-22	9.1-18.4	---	5.6-7.3	0
	22-30	9.1-18.4	---	5.6-7.3	0
	30-79	0.5-2.7	---	7.4-8.4	0
1948855 Udorthents, loamy----	0-5	3.1-26.3	---	4.5-7.3	0
	5-40	3.1-26.3	---	4.5-7.3	0
	40-70	3.1-20.5	---	4.5-8.4	0
1948989 Delaware-----	0-10	5.0-10.0	---	5.1-7.3	0
	10-40	3.0-6.0	---	5.1-7.3	0
	40-87	3.0-6.0	---	5.6-7.3	0

Table 19.--Water Features

[See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding are rather than to individual months. Absence of an entry indicates that the feature is not a concern or estimated. Depth to water table is based on a representative value]

National symbol and soil name	Hydro- logic group	Month	Water table		Ponding		
			Upper limit	Lower limit	Surface water depth	Duration	Frequency
290836 Hoosic, very stony-----	B	Jan-Dec	---	---	---	---	None
Otisville, very stony-----	A	Jan-Dec	---	---	---	---	None
296265 Alden-----	D	Jan-Jun Nov-Dec	0.0 0.0	>6.0 >6.0	0.0-1.0 0.0-1.0	Very long Very long	Frequent Frequent
296269 Fluents, (alluvial land)-----	C/D	Jan-Apr May-Jun September Oct-Dec	1.5 --- --- 1.5	>6.0 --- --- >6.0	---	---	None None None None
296271 Alvira-----	C	Jan-May Oct-Dec	1.0 1.0	1.8 1.8	---	---	None None
Watson-----	C	Jan-Mar Nov-Dec	1.5 1.5	2.3 2.3	---	---	None None
296272 Bath-----	C	Mar-Apr	2.1	2.2	---	---	None
296273 Bath-----	C	Mar-Apr	2.1	2.2	---	---	None
296274 Bath-----	C	Mar-Apr	2.1	2.2	---	---	None
296275 Bath-----	C	Mar-Apr	2.1	2.2	---	---	None

Table 19.--Water Features--Continued

National symbol and soil name	Hydro- logic group	Month	Water table		Ponding		
			Upper limit	Lower limit	Surface water depth	Duration	Frequency
296276 Bath-----			<i>Ft</i>	<i>Ft</i>	<i>Ft</i>		
	C	Mar-Apr	2.1	2.2	---	---	None
296277 Benson-----	D	Jan-Dec	---	---	---	---	None
296278 Benson-----	D	Jan-Dec	---	---	---	---	None
Rock outcrop-----	D	Jan-Dec	---	---	---	---	None
296279 Benson-----	D	Jan-Dec	---	---	---	---	None
Rock outcrop-----	D	Jan-Dec	---	---	---	---	None
296280 Braceville-----	C	Jan-Mar Nov-Dec	2.3 2.3	2.5 2.5	---	---	None None
296281 Braceville-----	C	Jan-Mar Nov-Dec	2.3 2.3	2.5 2.5	---	---	None None
296283 Buchanan-----	C	Jan-Mar Nov-Dec	2.3 2.3	1.6 1.6	---	---	None None
296288 Chippewa-----	D	Jan-Feb Mar-Apr May Nov-Dec	0.3 0.0 0.3 0.3	1.3 1.3 1.3 1.3	---	---	None None None None
Norwich-----	D	Jan-Feb Mar-Apr May Nov-Dec	0.3 0.0 0.3 0.3	1.3 1.3 1.3 1.3	---	---	None None None None

Table 19.--Water Features--Continued

National symbol and soil name	Hydro- logic group	Month	Water table		Ponding		
			Upper limit	Lower limit	Surface water depth	Duration	Frequency
296289 Chippewa-----	D		<i>Ft</i>	<i>Ft</i>	<i>Ft</i>		
		Jan-Feb	0.3	1.3	---	---	None
		Mar-Apr	0.0	1.3	---	---	None
		May	0.3	1.3	---	---	None
Norwich-----	D	Nov-Dec	0.3	1.3	---	---	None
		Jan-Feb	0.3	1.3	---	---	None
		Mar-Apr	0.0	1.3	---	---	None
		May	0.3	1.3	---	---	None
296295 Udorthents, cut and fill-----	B/D	Nov-Dec	0.3	1.3	---	---	None
		Jan-May	3.5	>6.0	---	---	None
		Nov-Dec	3.5	>6.0	---	---	None
296297 Dekalb-----	C	Jan-Dec	---	---	---	---	None
296298 Dekalb-----	C	Jan-Dec	---	---	---	---	None
296303 Hazleton-----	B	Jan-Dec	---	---	---	---	None
296304 Holly-----	D	Jan-May	0.3	>6.0	---	---	None
		November	---	---	---	---	None
		December	0.3	>6.0	---	---	None
296311 Lackawanna-----	C	Mar-Apr	2.1	2.3	---	---	None
Bath-----	C	Mar-Apr	2.1	2.2	---	---	None
296312 Lackawanna-----	C	Mar-Apr	2.1	2.3	---	---	None

Table 19.--Water Features--Continued

National symbol and soil name	Hydro- logic group	Month	Water table		Ponding		
			Upper limit	Lower limit	Surface water depth	Duration	Frequency
296313 Lackawanna-----	C	Mar-Apr	Ft	Ft	---	---	None
296315 Lackawanna-----							
296316 Lackawanna-----	C	Mar-Apr	2.1	2.3	---	---	None
296317 Laidig-----							
296326 Lordstown-----	C	Jan-Mar	2.1	2.3	---	---	None
296327 Lordstown-----							
296328 Lordstown-----	C	Jan-Dec	2.5	3.0	---	---	None
Oquaga-----							
296329 Mardin-----	C	Jan-Dec	---	---	---	---	None
296330 Mardin-----							
	C	Jan-Feb	1.4	1.7	---	---	None
	C	Mar-Apr	1.2	1.7	---	---	None
	C	May	1.4	1.7	---	---	None
	C	December	1.4	1.7	---	---	None
	C	Jan-Feb	1.4	1.7	---	---	None
	C	Mar-Apr	1.2	1.7	---	---	None
	C	May	1.4	1.7	---	---	None
	C	December	1.4	1.7	---	---	None

Table 19.--Water Features--Continued

National symbol and soil name	Hydro- logic group	Month	Water table		Ponding		
			Upper limit	Lower limit	Surface water depth	Duration	Frequency
296331 Mardin-----	C		<i>Ft</i>	<i>Ft</i>	<i>Ft</i>		
		Jan-Feb	1.4	1.7	---	---	None
		Mar-Apr	1.2	1.7	---	---	None
		May	1.4	1.7	---	---	None
	C	December	1.4	1.7	---	---	None
296332 Mardin-----							
		Jan-Feb	1.4	1.7	---	---	None
		Mar-Apr	1.2	1.7	---	---	None
	C	May	1.4	1.7	---	---	None
		December	1.4	1.7	---	---	None
296335 Meckesville-----							
	C	Jan-Apr	2.8	>6.0	---	---	None
		Nov-Dec	2.8	>6.0	---	---	None
296337 Meckesville-----							
	C	Jan-Apr	2.8	>6.0	---	---	None
		Nov-Dec	2.8	>6.0	---	---	None
296338 Morris-----							
	C	Jan-Feb	0.9	1.4	---	---	None
		Mar-Apr	0.5	1.4	---	---	None
		May	0.9	1.4	---	---	None
		December	0.9	1.4	---	---	None
296339 Morris-----	C						
		Jan-Feb	0.9	1.4	---	---	None
		Mar-Apr	0.5	1.4	---	---	None
		May	0.9	1.4	---	---	None
	C	December	0.9	1.4	---	---	None
296340 Morris-----							
		Jan-Feb	0.9	1.4	---	---	None
		Mar-Apr	0.5	1.4	---	---	None
		May	0.9	1.4	---	---	None
	C	December	0.9	1.4	---	---	None

Table 19.--Water Features--Continued

National symbol and soil name	Hydro- logic group	Month	Water table		Ponding		
			Upper limit	Lower limit	Surface water depth	Duration	Frequency
296341 Freetown, mucky peat-----			<i>Ft</i>	<i>Ft</i>	<i>Ft</i>		
	D	Jan-May	0.0	>6.0	0.0-0.5	Long	Frequent
		Jun-Oct	0.5	>6.0	0.0-0.5	Long	Occasional
		Nov-Dec	0.0	>6.0	0.0-0.5	Long	Frequent
296342 Paupack, mucky peat (shallow)-----	D	Jan-Dec	0.0	>6.0	0.0-1.0	Very long	Frequent
296343 Oquaga-----	C	Jan-Dec	---	---	---	---	None
Lackawanna-----	C	Mar-Apr	2.1	2.3	---	---	None
296344 Oquaga-----	C	Jan-Dec	---	---	---	---	None
Lackawanna-----	C	Mar-Apr	2.1	2.3	---	---	None
296346 Oquaga-----	C	Jan-Dec	---	---	---	---	None
Lackawanna-----	C	Mar-Apr	2.1	2.3	---	---	None
296347 Oquaga-----	C	Jan-Dec	---	---	---	---	None
Lackawanna-----	C	Mar-Apr	2.1	2.3	---	---	None
296348 Philo-----	B	Jan-Apr	2.3	>6.0	---	---	None
		May	---	---	---	---	None
		November	---	---	---	---	None
		December	2.3	>6.0	---	---	None



Table 19.--Water Features--Continued

National symbol and soil name	Hydro- logic group	Month	Water table		Ponding		
			Upper limit	Lower limit	Surface water depth	Duration	Frequency
296349 Pope-----			<i>Ft</i>	<i>Ft</i>	<i>Ft</i>		
	B	January	---	---	---	---	None
		Feb-Mar	5.0	>6.0	---	---	None
		April	---	---	---	---	None
		Nov-Dec	---	---	---	---	None
296350 Pope-----							
	B	January	---	---	---	---	None
		Feb-Mar	5.0	>6.0	---	---	None
		Apr-May	---	---	---	---	None
		Nov-Dec	---	---	---	---	None
296351 Rexford, somewhat poorly drained-----							
	C	Jan-Feb	1.0	1.5	---	---	None
		Mar-Apr	0.5	1.5	---	---	None
		May	0.8	1.5	---	---	None
		December	1.0	1.5	---	---	None
Rexford, poorly drained-----	C	Jan-Feb	0.0	0.8	---	---	None
		Mar-Apr	0.0	0.3	---	---	None
		May	0.0	0.7	---	---	None
		December	0.0	0.8	---	---	None
296355 Sheffield-----							
	D	Jan-May	0.0	>6.0	0.0-1.0	Very long	Occasional
		December	0.0	>6.0	0.0-1.0	Very long	Occasional
296363 Dystrochrepts, very stony-----							
	B	Jan-Dec	---	---	---	---	None
296369 Wayland-----							
	C/D	Jan-Jun	0.0	>6.0	0.0-0.5	Very long	Frequent
		Nov-Dec	0.0	>6.0	0.0-0.5	Very long	Frequent
296376 Wellsboro-----							
	C	Jan-Feb	1.4	1.7	---	---	None
		Mar-Apr	1.2	1.7	---	---	None
		May	1.4	1.7	---	---	None
		December	1.4	1.7	---	---	None

Table 19.--Water Features--Continued

National symbol and soil name	Hydro- logic group	Month	Water table		Ponding		
			Upper limit	Lower limit	Surface water depth	Duration	Frequency
296379 Wellisboro-----			<i>Ft</i>	<i>Ft</i>	<i>Ft</i>		
	C	Jan-Feb	1.4	1.7	---		None
		Mar-Apr	1.2	1.7	---		None
		May	1.4	1.7	---		None
		December	1.4	1.7	---		None
296385 Wyoming-----	A	Jan-Dec	---	---	---		None
296386 Wyoming-----	A	Jan-Dec	---	---	---		None
296387 Wyoming-----	A	Jan-Dec	---	---	---		None
296388 Wyoming-----	A	Jan-Dec	---	---	---		None
296389 Wyoming-----	A	Jan-Dec	---	---	---		None
296390 Water.							
297185 Edgemere-----	D	Jan-May Nov-Dec	0.0 0.0	2.0 2.0	0.0-0.5 0.0-0.5	Very long Very long	Frequent Frequent
Shohola-----	C	Jan-May Nov-Dec	1.0 1.0	2.0 2.0	---	---	None None
297186 Edgemere-----	D	Jan-May Nov-Dec	0.0 0.0	2.0 2.0	0.0-0.5 0.0-0.5	Very long Very long	Occasional Occasional

Table 19.--Water Features--Continued

National symbol and soil name	Hydro- logic group	Month	Water table		Ponding		
			Upper limit	Lower limit	Surface water depth	Duration	Frequency
297188 Manlius-----	C	Jan-Dec	---	---	---	---	None
Arnot-----	C/D	Jan-Dec	---	---	---	---	None
Rock outcrop-----	---	Jan-Dec	---	---	---	---	None
297189 Manlius-----	C	Jan-Dec	---	---	---	---	None
Arnot-----	C/D	Jan-Dec	---	---	---	---	None
Rock outcrop-----	---	Jan-Dec	---	---	---	---	None
297190 Braceville-----	C	Jan-Apr Nov-Dec	1.7 1.7	2.2 2.2	---	---	None None
297191 Wyalusing-----	D	Jan-May June Sep-Oct Nov-Dec	0.3 0.3 0.3 0.3	>6.0 >6.0 >6.0 >6.0	---	---	None None None None
297192 Pope-----	B	Jan-May Jun-Nov December	---	---	---	---	None None None
297193 Paupack-----	D	Jan-Dec	0.0	>6.0	0.0-1.0	Very long	Frequent
297196 Freetown-----	D	Jan-May Jun-Oct Nov-Dec	0.0 0.5 0.0	>6.0 >6.0 >6.0	0.0-0.5 0.0-0.5 0.0-0.5	Long Long Long	Frequent Occasional Frequent

Table 19.--Water Features---Continued

National symbol and soil name	Hydro- logic group	Month	Water table		Ponding		
			Upper limit	Lower limit	Surface water depth	Duration	Frequency
297197 Manlius-----	C	Jan-Dec	<i>Ft</i>	<i>Ft</i>	<i>Ft</i>		
			---	---	---	---	None
297198 Manlius-----	C	Jan-Dec					
			---	---	---	---	None
297201 Oquaga-----	C	Jan-Dec					
			---	---	---	---	None
297203 Delaware-----	B	Jan-Dec					
			---	---	---	---	None
297204 Delaware-----	B	Jan-Dec					
			---	---	---	---	None
297205 Delaware-----	B	Jan-Dec					
			---	---	---	---	None
297209 Philo-----	B	Jan-Apr May Jun-Nov December					
			2.3	>6.0	---	---	None
			---	---	---	---	None
			---	---	---	---	None
			2.3	>6.0	---	---	None
297210 Barbour-----	B	Jan-Apr May Jun-Nov December					
			4.5	>6.0	---	---	None
			---	---	---	---	None
			---	---	---	---	None
297216 Wurtsboro-----	C	Jan-Apr Nov-Dec					
			1.6	1.8	---	---	None
			1.6	1.8	---	---	None

Table 19.--Water Features--Continued

National symbol and soil name	Hydro- logic group	Month	Water table		Ponding	
			Upper limit	Lower limit	Surface water depth	Duration   Frequency
297217 Wurtsboro-----	C		<i>Ft</i>	<i>Ft</i>	<i>Ft</i>	
		Jan-Apr	1.6	1.8	---	None
		Nov-Dec	1.6	1.8	---	None
297227 Arnot-----	C/D					
		Jan-Dec	---	---	---	None
297228 Arnot-----	C/D					
		Jan-Dec	---	---	---	None
297229 Wyoming-----	A					
		Jan-Dec	---	---	---	None
297230 Wyoming-----	A					
		Jan-Dec	---	---	---	None
297231 Wyoming-----	A					
		Jan-Dec	---	---	---	None
297236 Suncook-----	A					
		Jan-May	---	---	---	None
		Jun-Nov	---	---	---	None
		December	---	---	---	None
297237 Mardin-----	C					
		Jan-Mar	1.4	1.7	---	None
		April	1.2	1.7	---	None
		May	1.4	1.7	---	None
		December	1.4	1.7	---	None
297238 Mardin-----	C					
		Jan-Mar	1.4	1.7	---	None
		April	1.2	1.7	---	None
		May	1.4	1.7	---	None
		December	1.4	1.7	---	None

Table 19.--Water Features--Continued

National symbol and soil name	Hydro- logic group	Month	Water table		Ponding		
			Upper limit	Lower limit	Surface water depth	Duration	Frequency
297239 Mardin-----	C		<i>Ft</i>	<i>Ft</i>	<i>Ft</i>		
		Jan-Mar	1.4	1.7	---		None
		April	1.2	1.7	---		None
		May	1.4	1.7	---		None
	C	December	1.4	1.7	---		None
297240 Mardin-----							
		Jan-Mar	1.4	1.7	---		None
		April	1.2	1.7	---		None
	B	May	1.4	1.7	---		None
		December	1.4	1.7	---		None
297241 Unadilla-----							
		Jan-Dec	---	---	---		None
297242 Shohola-----	C						
	D	Jan-May	1.0	2.0	---		None
		Nov-Dec	1.0	2.0	---		None
		Jan-May	0.0	2.0	0.0-0.5	Very long	Occasional
		Nov-Dec	0.0	2.0	0.0-0.5	Very long	Occasional
297243 Shohola-----	C						
	D	Jan-May	1.0	2.0	---		None
		Nov-Dec	1.0	2.0	---		None
		Jan-May	0.0	2.0	0.0-0.5	Very long	Occasional
		Nov-Dec	0.0	2.0	0.0-0.5	Very long	Occasional
297244 Lordstown-----	C						
	C	Jan-Dec	---	---	---		None
		Mar-Apr	2.5	2.7	---		None
		Jan-Dec	---	---	---		None
297247 Chenango-----	A						
	A	Jan-Dec	---	---	---		None

Table 19.--Water Features--Continued

National symbol and soil name	Hydro- logic group	Month	Water table		Ponding		
			Upper limit	Lower limit	Surface water depth	Duration	Frequency
297248 Chenango-----	A	Jan-Dec	Ft	Ft	Ft		
297249 Chenango-----	A	Jan-Dec	---	---	---	---	None
297253 Craigs ville-----	B	Jan-Mar Apr-May Jun-Nov December	6.0	---	---	---	None
Wyoming-----	A	Jan-Dec	---	---	---	---	None
297254 Pits, shale-----	D	Jan-Dec	---	---	---	---	None
Pits, gravel-----	A	Jan-Dec	---	---	---	---	None
298049 Wurtsboro, extremely stony-----	C	Jan-Mar Nov-Dec	1.5	2.0	---	---	None
298050 Wurtsboro, extremely stony-----	C	Jan-Mar Nov-Dec	1.5	2.0	---	---	None
Swartswood, extremely stony-----	C	Jan-Dec	---	---	---	---	None
298051 Wurtsboro, extremely stony-----	C	Jan-Mar Nov-Dec	1.5	2.0	---	---	None
Swartswood, extremely stony-----	C	Jan-Dec	---	---	---	---	None
298075 Colonie-----	A	Jan-Dec	---	---	---	---	None

Table 19.--Water Features---Continued

National symbol and soil name	Hydro- logic group	Month	Water table		Ponding		
			Upper limit	Lower limit	Surface water depth	Duration	Frequency
298188 Lackawanna, extremely stony-----	C	Jan-Dec	Ft	Ft	Ft		
298189 Lackawanna, extremely stony-----	C	Jan-Dec	---	---	---	---	None
298221 Swartswood, extremely stony-----	C	Jan-Dec	---	---	---	---	None
298222 Swartswood, extremely stony-----	C	Jan-Dec	---	---	---	---	None
298223 Swartswood, extremely stony-----	C	Jan-Dec	---	---	---	---	None
298255 Delaware, rarely flooded-----	B	Jan-Dec	---	---	---	---	None
298256 Delaware, rarely flooded-----	B	Jan-Dec	---	---	---	---	None
298257 Wallpack-----	B	Jan-Dec	---	---	---	---	None
298258 Wallpack-----	B	Jan-Dec	---	---	---	---	None
298259 Wallpack, extremely stony-----	B	Jan-Dec	---	---	---	---	None
298260 Wallpack, extremely stony-----	B	Jan-Dec	---	---	---	---	None



Table 19.--Water Features--Continued

National symbol and soil name	Hydro- logic group	Month	Water table		Ponding		
			Upper limit	Lower limit	Surface water depth	Duration	Frequency
298261 Wallpack-----			<i>Ft</i>	<i>Ft</i>	<i>Ft</i>		
	B	Jan-Dec	---	---	---	---	None
298262 Wallpack, extremely stony-----	B	Jan-Dec	---	---	---	---	None
298265 Venango, extremely stony-----	D	Jan-May Nov-Dec	0.5 0.5	1.3 1.3	---	---	None None
298266 Venango, extremely stony-----	D	Jan-May Nov-Dec	0.5 0.5	1.3 1.3	---	---	None None
298409 Swartswood, extremely stony-----	C	Jan-Dec	---	---	---	---	None
298411 Swartswood, extremely stony-----	C	Jan-Dec	---	---	---	---	None
298413 Swartswood, extremely stony-----	C	Jan-Dec	---	---	---	---	None
318498 Hazen, very stony-----	B	Jan-Dec	---	---	---	---	None
Hoosic, very stony-----	B	Jan-Dec	---	---	---	---	None
318533 Hazen, very stony-----	B	Jan-Dec	---	---	---	---	None
Hoosic, very stony-----	B	Jan-Dec	---	---	---	---	None

Table 19.--Water Features---Continued

National symbol and soil name	Hydro- logic group	Month	Water table		Ponding		
			Upper limit	Lower limit	Surface water depth	Duration	Frequency
319783 Catden-----			<i>Ft</i>	<i>Ft</i>	<i>Ft</i>		
	B/D						
		Jan-Jun	0.0	5.0	0.0-1.0	Very long	Frequent
		Sep-Dec	0.0	5.0	0.0-1.0	Very long	Frequent
319784 Fredon, very stony-----	D						
		Jan-Jun	1.2	5.0	---	---	None
		Oct-Dec	1.2	5.0	---	---	None
Halsey, very stony-----	B/D						
		Jan-Jun	0.0	5.0	0.0-0.5	Very long	Frequent
		Sep-Dec	0.0	5.0	0.0-0.5	Very long	Frequent
543222 Andover, extremely stony-----	D						
		Jan-Jun	0.3	1.9	---	---	None
		Oct-Dec	0.3	1.9	---	---	None
Buchanan, extremely stony-----	C						
		Jan-Mar	1.7	2.3	---	---	None
		Nov-Dec	1.7	2.3	---	---	None
543243 Berks-----	C						
		Jan-Dec	---	---	---	---	None
Weikert-----	C						
		Jan-Dec	---	---	---	---	None
543246 Buchanan-----	C						
		Jan-Mar	1.7	2.3	---	---	None
		Nov-Dec	1.7	2.3	---	---	None
543247 Buchanan, extremely stony-----	C						
		Jan-Mar	1.7	2.3	---	---	None
		Nov-Dec	1.7	2.3	---	---	None
543257 Chippewa-----	D						
		Jan-Feb	0.3	1.3	---	---	None
		Mar-Apr	0.0	1.3	---	---	None
		May	0.3	1.3	---	---	None
		Nov-Dec	0.3	1.3	---	---	None

Table 19.--Water Features--Continued

National symbol and soil name	Hydro- logic group	Month	Water table		Ponding		
			Upper limit	Lower limit	Surface water depth	Duration	Frequency
543258 Chippewa-----			<i>Ft</i>	<i>Ft</i>	<i>Ft</i>		
	D	Jan-Feb	0.3	1.3	---		None
		Mar-Apr	0.0	1.3	---		None
		May	0.3	1.3	---		None
		Nov-Dec	0.3	1.3	---		None
543259 Chippewa, extremely stony-----							
	D	Jan-Feb	0.3	1.3	---		None
		Mar-Apr	0.0	1.3	---		None
		May	0.3	1.3	---		None
		Nov-Dec	0.3	1.3	---		None
543271 Delaware-----							
	B	Jan-Dec	---	---	---		None
543276 Fluvaquents-----							
	D	Jan-Mar	0.3	>6.0	---		None
		Nov-Dec	0.3	>6.0	---		None
543292 Hazleton, extremely stony-----							
	B	Jan-Dec	---	---	---		None
543293 Hazleton, extremely stony-----							
	B	Jan-Dec	---	---	---		None
543299 Laidig, extremely stony-----							
	C	Jan-Mar	3.2	>6.0	---		None
543300 Laidig, extremely stony-----							
	C	Jan-Mar	3.2	>6.0	---		None
543304 Laidig-----							
	C	Jan-Mar	3.2	>6.0	---		None
Rubble land-----							
	A	Jan-Dec	---	---	---		None

Table 19.--Water Features---Continued

National symbol and soil name	Hydro- logic group	Month	Water table		Ponding		
			Upper limit	Lower limit	Surface water depth	Duration	Frequency
543318 Rubble land-----			<i>Ft</i>	<i>Ft</i>	<i>Ft</i>		
	A	Jan-Dec	---	---	---		None
543327 Swartswood-----	C	Jan-Mar Nov-Dec	2.8 2.8	3.5 3.5	---	---	None None
543328 Swartswood-----	C	Jan-Mar Nov-Dec	2.8 2.8	3.5 3.5	---	---	None None
543330 Swartswood, extremely stony-----	C	Jan-Mar Nov-Dec	2.8 2.8	3.5 3.5	---	---	None None
Wurtsboro, extremely stony-----	C	Jan-Mar Nov-Dec	2.0 2.0	2.3 2.3	---	---	None None
543331 Swartswood, extremely stony-----	C	Jan-Mar Nov-Dec	2.8 2.8	3.5 3.5	---	---	None None
Wurtsboro, extremely stony-----	C	Jan-Mar Nov-Dec	2.0 2.0	2.3 2.3	---	---	None None
543359 Volusia-----	C	Jan-May Nov-Dec	1.0 1.0	3.5 3.5	---	---	None None
543360 Volusia, extremely stony-----	C	Jan-May Nov-Dec	1.0 1.0	3.5 3.5	---	---	None None
543374 Wurtsboro-----	C	Jan-Mar Nov-Dec	2.0 2.0	2.3 2.3	---	---	None None

Table 19.--Water Features---Continued

National symbol and soil name	Hydro- logic group	Month	Water table		Pending		
			Upper limit	Lower limit	Surface water depth	Duration	Frequency
543375 Wurtsboro-----	C		<i>Ft</i>	<i>Ft</i>	<i>Ft</i>		
		Jan-Mar	2.0	2.3	---	---	None
612280 Scio-----	C	Nov-Dec	2.0	2.3	---	---	None
		March	1.8	>6.0	---	---	None
		April	1.8	>6.0	---	---	None
		May	1.8	>6.0	---	---	None
612666 Colonie-----	A						
		Jan-Dec	---	---	---	---	None
612668 Hoosic, very stony-----	B						
		Jan-Dec	---	---	---	---	None
Hazen, very stony-----	B						
		Jan-Dec	---	---	---	---	None
612724 Lordstown, very rocky-----	C						
		Jan-Dec	---	---	---	---	None
Wallpack, very rocky-----	B						
		Jan-Dec	---	---	---	---	None
612732 Atherton, very poorly drained-----	B/D						
		Jan-Jun	0.0	5.8	0.0-0.5	Long	Frequent
		Jul-Oct	---	---	0.0-0.5	Long	Frequent
		Nov-Dec	0.0	5.8	0.0-0.5	Long	Frequent
Atherton, poorly drained-----	B/D						
		Jan-Jun	0.2	5.0	---	---	None
		Nov-Dec	0.2	5.0	---	---	None
612738 Fluvaquents, occasionally flooded-----	B/D						
		Jan-May	0.5	>6.0	---	---	None
		June	---	---	---	---	None
		Sep-Oct	0.5	>6.0	---	---	None
		Nov-Dec	0.5	>6.0	---	---	None
612753 Wallpack, aeolian mantle, very stony-----	B						
		Jan-Dec	---	---	---	---	None

Table 19.--Water Features---Continued

National symbol and soil name	Hydro- logic group	Month	Water table		Ponding		
			Upper limit	Lower limit	Surface water depth	Duration	Frequency
612756 Wallpack, aeolian mantle, very stony-	B	Jan-Dec	Ft	Ft	Ft		
			---	---	---	---	None
612757 Wallpack, aeolian mantle, very stony-	B	Jan-Dec	---	---	---	---	None
			---	---	---	---	None
612767 Wellsboro, extremely stony-----	C	Jan-Mar Nov-Dec	2.0 2.0	2.4 2.4	---	---	None None
			---	---	---	---	None
612768 Wellsboro, extremely stony-----	C	Jan-Mar Nov-Dec	2.0 2.0	2.4 2.4	---	---	None None
			---	---	---	---	None
613393 Alden, extremely stony-----	D	Jan-Jun Nov-Dec	0.0 0.0	5.0 5.0	0.0-1.0 0.0-1.0	Very long Very long	Frequent Frequent
			---	---	---	---	None
613447 Unadilla-----	B	Jan-Dec	---	---	---	---	None
			---	---	---	---	None
613448 Unadilla-----	B	Jan-Dec	---	---	---	---	None
			---	---	---	---	None
614075 Wurtsboro, extremely stony-----	C	Jan-Mar Nov-Dec	1.5 1.5	2.0 2.0	---	---	None None
			---	---	---	---	None
Swartswood, extremely stony-----	C	Jan-Dec	---	---	---	---	None
			---	---	---	---	None
620179 Arnot, very rocky-----	D	Jan-Dec	---	---	---	---	None
			---	---	---	---	None
Lordstown, very rocky-----	C	Jan-Dec	---	---	---	---	None
			---	---	---	---	None

Table 19.--Water Features--Continued

National symbol and soil name	Hydro- logic group	Month	Water table		Ponding		
			Upper limit	Lower limit	Surface water depth	Duration	Frequency
620180 Arnot-----	D	Jan-Dec	Ft	Ft	Ft		
Lordstown-----	C	Jan-Dec	---	---	---	---	None
Rock outcrop-----	D	Jan-Dec	---	---	---	---	None
620181 Arnot-----	D						
Lordstown-----	C	Jan-Dec	---	---	---	---	None
Rock outcrop-----	D	Jan-Dec	---	---	---	---	None
623089 Chippewa, extremely stony-----	D	Jan-Jun Nov-Dec	0.0 0.0	1.1 1.1	0.0-0.5 0.0-0.5	Long Long	Frequent Frequent
623109 Farmington-----	D	Jan-Dec	---	---	---	---	None
Rock outcrop-----	D	Jan-Dec	---	---	---	---	None
624811 Galway, very rocky-----	C	Jan-Dec	---	---	---	---	None
624813 Lackawanna, extremely stony-----	C	Jan-Dec	---	---	---	---	None
624816 Lordstown, very rocky-----	C	Jan-Dec	---	---	---	---	None
Wallpack, very rocky-----	B	Jan-Dec	---	---	---	---	None
624822 Lordstown-----	C	Jan-Dec	---	---	---	---	None
Wallpack-----	B	Jan-Dec	---	---	---	---	None

Table 19.--Water Features---Continued

National symbol and soil name	Hydro- logic group	Month	Water table		Ponding		
			Upper limit	Lower limit	Surface water depth	Duration	Frequency
624823 Lordstown----- Wallpack-----	C	Jan-Dec	---	---	---	---	None
624824 Lordstown----- Wallpack-----	C	Jan-Dec	---	---	---	---	None
624826 Manlius, very rocky----- Nassau, very rocky-----	C	Jan-Dec	---	---	---	---	None
624827 Nassau, very rocky----- Manlius, very rocky-----	C	Jan-Dec	---	---	---	---	None
624828 Nassau, very rocky----- Manlius, very rocky-----	C	Jan-Dec	---	---	---	---	None
624829 Nassau, very rocky----- Manlius, very rocky-----	C	Jan-Dec	---	---	---	---	None
624832 Nassau----- Rock outcrop-----	D	Jan-Dec	---	---	---	---	None
624841 Oquaga-----	C	Jan-Dec	---	---	---	---	None



Table 19.--Water Features--Continued

National symbol and soil name	Hydro- logic group	Month	Water table		Ponding		
			Upper limit	Lower limit	Surface water depth	Duration	Frequency
624841 Rock outcrop-----			<i>Ft</i>	<i>Ft</i>	<i>Ft</i>		
	D	Jan-Dec	---	---	---	---	None
624845 Rock outcrop-----	D	Jan-Dec	---	---	---	---	None
Farmington-----	D	Jan-Dec	---	---	---	---	None
Galway-----	C	Jan-Dec	---	---	---	---	None
624846 Rock outcrop-----	D	Jan-Dec	---	---	---	---	None
Arnot-----	D	Jan-Dec	---	---	---	---	None
Rubble land-----	D	Jan-Dec	---	---	---	---	None
626816 Udifluvents, occasionally flooded----	A	Jan-Jun Nov-Dec	3.3 3.3	>6.0 >6.0	---	---	None None
635458 Oquaga, very rocky-----	C	Jan-Dec	---	---	---	---	None
Lackawanna, very rocky-----	C	Jan-Dec	---	---	---	---	None
635459 Oquaga, very rocky-----	C	Jan-Dec	---	---	---	---	None
Lackawanna, very rocky-----	C	Jan-Dec	---	---	---	---	None
740953 Delaware, rarely flooded-----	B	Jan-Dec	---	---	---	---	None
740968 Nassau, very rocky-----	D	Jan-Dec	---	---	---	---	None
Manlius, very rocky-----	C	Jan-Dec	---	---	---	---	None

Table 19.--Water Features---Continued

National symbol and soil name	Hydro- logic group	Month	Water table		Ponding		
			Upper limit	Lower limit	Surface water depth	Duration	Frequency
740969 Nassau, very rocky-----	D	Jan-Dec	---	---	---	---	None
Manlius, very rocky-----	C	Jan-Dec	---	---	---	---	None
740971 Oquaga, very rocky-----	C	Jan-Dec	---	---	---	---	None
Lackawanna, very rocky-----	C	Jan-Dec	---	---	---	---	None
740972 Oquaga, very rocky-----	C	Jan-Dec	---	---	---	---	None
Lackawanna, very rocky-----	C	Jan-Dec	---	---	---	---	None
740974 Oquaga-----	C	Jan-Dec	---	---	---	---	None
Rock outcrop-----	D	Jan-Dec	---	---	---	---	None
740975 Rock outcrop-----	D	Jan-Dec	---	---	---	---	None
Arnot-----	D	Jan-Dec	---	---	---	---	None
Rubble land-----	D	Jan-Dec	---	---	---	---	None
740987 Scio-----	C	Mar-May	1.8	>6.0	---	---	None
740988 Udifuvents, occasionally flooded----	A	Jan-Jun Nov-Dec	3.3 3.3	>6.0 >6.0	---	---	None None
740991 Unadilla-----	B	Jan-Dec	---	---	---	---	None

Table 19.--Water Features--Continued

National symbol and soil name	Hydro- logic group	Month	Water table		Ponding		
			Upper limit	Lower limit	Surface water depth	Duration	Frequency
740992 Unadilla-----	B	Jan-Dec	Ft	Ft	Ft		
			---	---	---	---	None
740995 Wellisboro, extremely stony-----	C	Jan-Mar Nov-Dec	2.0	2.4	---	---	None
			2.0	2.4	---	---	None
740996 Wellisboro, extremely stony-----	C	Jan-Mar Nov-Dec	2.0	2.4	---	---	None
			2.0	2.4	---	---	None
741149 Lackawanna, extremely stony-----	C	Jan-Dec	---	---	---	---	None
			---	---	---	---	None
741150 Lackawanna, extremely stony-----	C	Jan-Dec	---	---	---	---	None
			---	---	---	---	None
801114 Oquaga-----	C	Jan-Dec	---	---	---	---	None
			---	---	---	---	None
Rock outcrop-----	D	Jan-Dec	---	---	---	---	None
			---	---	---	---	None
810906 Oquaga-----	C	Jan-Dec	---	---	---	---	None
			---	---	---	---	None
Rock outcrop-----	D	Jan-Dec	---	---	---	---	None
			---	---	---	---	None
1147465 Alden, extremely stony-----	D	Jan-Jun Nov-Dec	0.0	5.0	0.0-1.0	Very long	Frequent
			0.0	5.0	0.0-1.0	Very long	Frequent
1147467 Arnot, very rocky-----	D	Jan-Dec	---	---	---	---	None
			---	---	---	---	None
Lordstown, very rocky-----	C	Jan-Dec	---	---	---	---	None
			---	---	---	---	None

Table 19.--Water Features---Continued

National symbol and soil name	Hydro- logic group	Month	Water table			Ponding		
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	
1147468 Arnot-----	D	Jan-Dec	---	---	Ft	---	None	
Lordstown-----	C	Jan-Dec	---	---	---	---	None	
Rock outcrop-----	D	Jan-Dec	---	---	---	---	None	
1147469 Arnot-----	D	Jan-Dec	---	---	---	---	None	
Lordstown-----	C	Jan-Dec	---	---	---	---	None	
Rock outcrop-----	D	Jan-Dec	---	---	---	---	None	
1147470 Atherton, very poorly drained-----	B/D	Jan-Jun Jul-Oct Nov-Dec	0.0 ---	5.8 ---	0.0-0.5 0.0-0.5	Long Long Long	Frequent Frequent Frequent	
Atherton, poorly drained-----	B/D	Jan-Jun Nov-Dec	0.2 0.2	5.0 5.0	---	---	None None	
1147471 Catden-----	B/D	Jan-Jun Sep-Dec	0.0 0.0	5.0 5.0	0.0-1.0 0.0-1.0	Very long Very long	Frequent Frequent	
1147474 Chippewa, extremely stony-----	D	Jan-Jun Nov-Dec	0.0 0.0	1.1 1.1	0.0-0.5 0.0-0.5	Long Long	Frequent Frequent	
1147475 Colonie-----	A	Jan-Dec	---	---	---	---	None	
1147478 Delaware, rarely flooded-----	B	Jan-Dec	---	---	---	---	None	

Table 19.--Water Features--Continued

National symbol and soil name	Hydro- logic group	Month	Water table		Ponding		
			Upper limit	Lower limit	Surface water depth	Duration	Frequency
1147482 Fredon, very stony-----	D	Jan-Jun	Ft	Ft	Ft		
		Oct-Dec	1.2	5.0	---	---	None
			1.2	5.0	---	---	None
Halsey, very stony-----	B/D	Jan-Jun	0.0	5.0	0.0-0.5	Very long	Frequent
		Sep-Dec	0.0	5.0	0.0-0.5	Very long	Frequent
1147485 Hazen, very stony-----	B						
		Jan-Dec	---	---	---	---	None
		Jan-Dec	---	---	---	---	None
1147490 Hoosic, very stony-----	B						
		Jan-Dec	---	---	---	---	None
		Jan-Dec	---	---	---	---	None
1147491 Hoosic, very stony-----	B						
		Jan-Dec	---	---	---	---	None
		Jan-Dec	---	---	---	---	None
Otisville, very stony-----	A						
		Jan-Dec	---	---	---	---	None
1147492 Lackawanna, extremely stony-----	C						
		Jan-Dec	---	---	---	---	None
1147500 Wurtsboro, extremely stony-----	C						
		Jan-Mar	1.5	2.0	---	---	None
		Nov-Dec	1.5	2.0	---	---	None
1147501 Wurtsboro, extremely stony-----	C						
		Jan-Mar	1.5	2.0	---	---	None
		Nov-Dec	1.5	2.0	---	---	None
Swartswood, extremely stony-----	C						
		Jan-Dec	---	---	---	---	None
1147502 Wurtsboro, extremely stony-----	C						
		Jan-Mar	1.5	2.0	---	---	None
		Nov-Dec	1.5	2.0	---	---	None

Table 19.--Water Features---Continued

National symbol and soil name	Hydro- logic group	Month	Water table		Ponding		
			Upper limit	Lower limit	Surface water depth	Duration	Frequency
1147502 Swartswood, extremely stony-----			<i>Ft</i>	<i>Ft</i>	<i>Ft</i>		
	C	Jan-Dec	---	---	---	---	None
1147527 Udorthents-----	D	Jan-Dec					None
Urban land-----	D	Jan-Dec					None
1147532 Udorthents-----	D	Jan-Dec					None
1147533 Wurtsboro, extremely stony-----	C	Jan-Mar Nov-Dec	1.5 1.5	2.0 2.0	---	---	None None
Swartswood, extremely stony-----	C	Jan-Dec	---	---	---	---	None
1948749 Arnot-----	C/D	Jan-Dec	---	---	---	---	None
1948750 Arnot-----	C/D	Jan-Dec	---	---	---	---	None
1948751 Arnot-----	C/D	Jan-Dec	---	---	---	---	None
1948774 Conotton-----	B	Jan-Dec	---	---	---	---	None
1948775 Conotton-----	B	Jan-Dec	---	---	---	---	None
1948776 Conotton-----	B	Jan-Dec	---	---	---	---	None

Table 19.--Water Features--Continued

National symbol and soil name	Hydro- logic group	Month	Water table		Ponding	
			Upper limit	Lower limit	Surface water depth	Frequency
1948777 Conotton-----	B	Jan-Dec	<i>Ft</i>	<i>Ft</i>	<i>Ft</i>	
			---	---	---	None
1948797 Manlius-----	C	Jan-Dec				
			---	---	---	None
1948802 Manlius-----	C	Jan-Dec				
			---	---	---	None
1948818 Manlius-----	C	Jan-Dec				
			---	---	---	None
1948832 Penargyl-----	B	Jan-Dec				
			---	---	---	None
1948846 PHELPS-----	B	Mar-May	1.8	>6.0	---	
						None
1948855 Udorthents, loamy-----	A/D	Jan-Jun Nov-Dec	1.7	>6.0	---	None
			1.7	>6.0	---	None
1948989 Urban land-----	B	Jan-Dec				
			---	---	---	None
Delaware-----		Jan-Dec	---	---	---	None

Table 20.--Soil Features

[See text for definitions of terms used in this table. Absence of an entry indicates that data were

Map unit symbol and soil name	Kind	Restrictive layer		Potential for frost action
		Depth to top	Thickness	
290836 Hoosic, very stony-----	No restriction	In	In	Low
Otisville, very stony-----	No restriction	---	---	Low
Hazen, very stony-----	No restriction	---	---	Moderate
296265 Alden-----	No restriction	---	---	High
296269 Fluents, (alluvial land)-----	No restriction	---	---	Moderate
Holly-----	No restriction	---	---	High
296271 Alvira-----	Fragipan	15-28	12-65	High
Watson-----	Fragipan	18-32	---	Moderate
Shelmadine-----	Fragipan	18-30	10-42	High
296272 Bath-----	Fragipan	21-38	20-60	Moderate
Lackawanna-----	No restriction	---	---	Moderate
Mardin-----	Fragipan	14-26	14-65	Moderate
296273 Bath-----	Fragipan	21-38	20-60	Moderate
Lackawanna-----	No restriction	---	---	Moderate
Mardin-----	Fragipan	14-26	14-65	Moderate
296274 Bath-----	Fragipan	21-38	20-60	Moderate
Lackawanna-----	No restriction	---	---	Moderate
Mardin-----	Fragipan	14-26	14-65	Moderate



Table 20.---Soil Features---Continued

Map unit symbol and soil name	Restrictive layer				Potential for frost action
	Kind	Depth to top	Thickness	Hardness	
		In	In		
296275 Bath-----	Fragipan	21-38	20-60	Noncemented	Moderate
296276 Bath-----	Fragipan	21-38	20-60	Noncemented	Moderate
296277 Benson-----	Lithic bedrock	12-20	---	Very strongly cemented	Moderate
Rock outcrop-----	Lithic bedrock	0	---	Very strongly cemented	---
296278 Benson-----	Lithic bedrock	12-20	---	Very strongly cemented	Moderate
Rock outcrop-----	Lithic bedrock	0	---	Very strongly cemented	---
296279 Benson-----	Lithic bedrock	12-20	---	Very strongly cemented	Moderate
Rock outcrop-----	Lithic bedrock	0	---	Very strongly cemented	---
296280 Braceville-----	Fragipan	18-30	---	Noncemented	Moderate
Rexford, poorly drained-----	No restriction	---	---	---	High
296281 Braceville-----	Fragipan	18-30	---	Noncemented	Moderate
Rexford, poorly drained-----	Fragipan	15-24	13-35	Noncemented	High
296283 Buchanan-----	Fragipan	20-36	6-60	Noncemented	Moderate
Shelmadine-----	Fragipan	18-30	10-42	Noncemented	High
296288 Chippewa-----	Fragipan	10-24	12-50	Noncemented	High
Norwich-----	Fragipan	10-24	12-50	Noncemented	High

Table 20.---Soil Features---Continued

Map unit symbol and soil name	Kind	Restrictive layer			Potential for frost action
		Depth to top	Thickness	Hardness	
		In	In		
296289 Chippewa-----	Fragipan	10-24	12-50	Noncemented	High
Norwich-----	Fragipan	10-24	12-50	Noncemented	High
296295 Udorthents, cut and fill-----	No restriction	---	---	---	---
296297 Dekalb-----	Lithic bedrock	20-40	---	Very strongly cemented	Low
296298 Dekalb-----	Lithic bedrock	20-40	---	Very strongly cemented	Low
296303 Hazleton-----	Lithic bedrock	40-96	---	Very strongly cemented	Moderate
296304 Holly-----	No restriction	---	---	---	High
296311 Lackawanna-----	Fragipan	21-36	---	Noncemented	Moderate
Bath-----	Fragipan	21-38	20-60	Noncemented	Moderate
Lordstown-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
Mardin-----	Fragipan	14-26	14-65	Noncemented	Moderate
Oquaga-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
Wellsboro-----	Fragipan	14-26	14-65	Noncemented	High
296312 Lackawanna-----	Fragipan	17-36	---	Noncemented	Moderate
Bath-----	No restriction	---	---	---	Moderate
Wellsboro-----	Fragipan	14-26	14-65	Noncemented	High

Table 20.---Soil Features---Continued

Map unit symbol and soil name	Restrictive layer			Potential for frost action
	Kind	Depth to top	Thickness	Hardness
296313 Lackawanna-----	Fragipan	In	In	
Bath-----	No restriction	17-36	---	Noncemented
Lackawanna-----	No restriction	---	---	---
296315 Lackawanna-----	Fragipan	21-36	---	Noncemented
Bath-----	No restriction	---	---	---
Wellsboro-----	Fragipan	14-26	14-65	Noncemented
296316 Lackawanna-----	Fragipan	21-36	---	Noncemented
Bath-----	No restriction	---	---	---
Wellsboro-----	Fragipan	14-26	14-65	Noncemented
296317 Laidig-----	Fragipan	30-50	10-50	Noncemented
296326 Lordstown-----	Lithic bedrock	20-40	---	Very strongly cemented
Arnot-----	Lithic bedrock	10-20	---	Very strongly cemented
Bath-----	No restriction	---	---	---
Oquaga-----	Lithic bedrock	20-40	---	Very strongly cemented
296327 Lordstown-----	Lithic bedrock	20-40	---	Very strongly cemented
Arnot-----	Lithic bedrock	10-20	---	Very strongly cemented
Bath-----	No restriction	---	---	---
Oquaga-----	Lithic bedrock	20-40	---	Very strongly cemented

Table 20.---Soil Features---Continued

Map unit symbol and soil name	Kind	Restrictive layer			Potential for frost action
		Depth to top	Thickness	Hardness	
		In	In		
296328 Lordstown-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
Oquaga-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
296329 Mardin-----	Fragipan	14-26	14-65	Noncemented	Moderate
Volusia-----	Fragipan	11-22	28-69	Noncemented	High
Chippewa-----	Fragipan	10-24	12-50	Noncemented	High
Bath-----	No restriction	---	---	---	Moderate
296330 Mardin-----	Fragipan	14-26	14-65	Noncemented	Moderate
Volusia-----	Fragipan	11-22	28-69	Noncemented	High
Bath-----	No restriction	---	---	---	Moderate
Chippewa-----	Fragipan	10-24	12-50	Noncemented	High
296331 Mardin-----	Fragipan	14-26	14-65	Noncemented	Moderate
Lordstown-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
Volusia-----	Fragipan	11-22	28-69	Noncemented	High
Chippewa-----	Fragipan	10-24	12-50	Noncemented	High
296332 Mardin-----	Fragipan	14-26	14-65	Noncemented	Moderate
Lordstown-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
Volusia-----	Fragipan	11-22	28-69	Noncemented	High
Chippewa-----	Fragipan	10-24	12-50	Noncemented	High
296335 Meckesville-----	Fragipan	25-48	10-55	Noncemented	Moderate

Table 20.---Soil Features---Continued

Map unit symbol and soil name	Restrictive layer				Potential for frost action
	Kind	Depth to top	Thickness	Hardness	
296337 Meckesville-----	Fragipan	In 25-48	In 10-55	Noncemented	Moderate
296338 Morris-----	Fragipan	11-22	26-69	Noncemented	High
Norwich-----	Fragipan	10-24	12-50	Noncemented	High
296339 Morris-----	Fragipan	11-22	26-69	Noncemented	High
Norwich-----	Fragipan	10-24	12-50	Noncemented	High
296340 Morris-----	Fragipan	11-22	26-69	Noncemented	High
Norwich-----	Fragipan	10-24	12-50	Noncemented	High
296341 Freetown, mucky peat-----	No restriction	---	---	---	High
296342 Paupack, mucky peat (shallow)-----	No restriction	---	---	---	High
296343 Oquaga-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
Lackawanna-----	Fragipan	21-36	---	Noncemented	Moderate
296344 Oquaga-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
Lackawanna-----	Fragipan	21-36	---	Noncemented	Moderate
296346 Oquaga-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
Lackawanna-----	Fragipan	21-36	---	Noncemented	Moderate
296347 Oquaga-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
Lackawanna-----	Fragipan	21-36	---	Noncemented	Moderate

Table 20.---Soil Features---Continued

Map unit symbol and soil name	Restrictive layer				Potential for frost action
	Kind	Depth to top	Thickness	Hardness	
296348 Philo-----	Lithic bedrock	48-99	---	Very strongly cemented	Moderate
Holly-----	No restriction	---	---	---	High
296349 Pope-----	No restriction	---	---	---	Moderate
Holly-----	No restriction	---	---	---	High
296350 Pope-----	No restriction	---	---	---	Moderate
Holly-----	No restriction	---	---	---	High
296351 Rexford, somewhat poorly drained-----	Fragipan	15-24	13-35	Noncemented	High
Rexford, poorly drained-----	Fragipan	15-24	13-35	Noncemented	High
296355 Sheffield-----	Fragipan Paralithic bedrock	15-26 48-99	---	Noncemented Moderately cemented	High
296363 Dystrochrepts, very stony-----	Lithic bedrock	40-40	---	Very strongly cemented	Moderate
296369 Wayland-----	No restriction	---	---	---	High
296376 Wellisboro-----	Fragipan	14-26	14-65	Noncemented	High
Morris-----	Fragipan	11-22	26-69	Noncemented	High
Norwich-----	Fragipan	10-24	12-50	Noncemented	High
Lackawanna-----	No restriction	---	---	---	Moderate
296379 Wellisboro-----	Fragipan	14-26	14-65	Noncemented	High
Lackawanna-----	No restriction	---	---	---	Moderate

Table 20.--Soil Features--Continued

Map unit symbol and soil name	Restrictive layer					Potential for frost action
	Kind	Depth to top	Thickness	Hardness		
		In				
296379 Norwich	Fragipan	10-24	12-50	Noncemented	High	
Morris	Fragipan	11-22	26-69	Noncemented	High	
296385 Wyoming	No restriction	---	---	---	Low	
Braceville	No restriction	---	---	---	Moderate	
Unadilla	No restriction	---	---	---	High	
296386 Wyoming	No restriction	---	---	---	Low	
Braceville	No restriction	---	---	---	Moderate	
Unadilla	No restriction	---	---	---	High	
296387 Wyoming	No restriction	---	---	---	Low	
Braceville	No restriction	---	---	---	Moderate	
Unadilla	No restriction	---	---	---	High	
296388 Wyoming	No restriction	---	---	---	Low	
Unadilla	No restriction	---	---	---	High	
296389 Wyoming	No restriction	---	---	---	Low	
296390 Water	No restriction	---	---	---	---	
297185 Edgemere	Fragipan	15-25	---	Noncemented	High	
Shohola	Fragipan	18-30	---	Noncemented	High	
Mardin	Fragipan	14-26	14-65	Noncemented	Moderate	
Freetown	No restriction	---	---	---	High	

Table 20.---Soil Features---Continued

Map unit symbol and soil name	Restrictive layer				Potential for frost action
	Kind	Depth to top	Thickness	Hardness	
297186 Edgemere-----	Fragipan	In	In	Noncemented	High
Shohola-----	Fragipan	15-25	---	Noncemented	High
Mardin-----	Fragipan	15-31	---	Noncemented	Moderate
Freetown-----	No restriction	14-26	14-65	Noncemented	High
Wyalusing-----	No restriction	---	---	---	High
297188 Manlius-----	Lithic bedrock	---	---	---	Moderate
Arnot-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
Rock outcrop-----	No restriction	10-20	---	Very strongly cemented	---
Mardin-----	Fragipan	---	---	---	Moderate
Rubble land-----	No restriction	14-26	14-65	Noncemented	---
297189 Manlius-----	No restriction	---	---	---	Moderate
Arnot-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
Rock outcrop-----	No restriction	10-20	---	Very strongly cemented	---
Mardin-----	Fragipan	---	---	---	Moderate
Rubble land-----	No restriction	14-26	14-65	Noncemented	---
297190 Braceville-----	No restriction	---	---	---	Moderate
Wyoming-----	No restriction	15-30	---	Noncemented	Low
Chenango-----	No restriction	---	---	---	Moderate
Rexford, poorly drained-----	Fragipan	---	---	---	High



Table 20.--Soil Features--Continued

Map unit symbol and soil name	Restrictive layer				Potential for frost action
	Kind	Depth to top	Thickness	Hardness	
297191 Wyalusing-----	No restriction	In	In	---	High
Barbour-----	No restriction	---	---	---	Moderate
Craigsville-----	No restriction	---	---	---	Moderate
Pope-----	No restriction	---	---	---	Moderate
297192 Pope-----	No restriction	---	---	---	Moderate
Wyalusing-----	No restriction	---	---	---	High
297193 Paupack-----	No restriction	---	---	---	High
Edgemere-----	Fragipan	15-25	---	Noncemented	High
Kimbles-----	No restriction	---	---	---	High
297196 Freetown-----	No restriction	---	---	---	High
Glensyre-----	No restriction	---	---	---	High
297197 Manlius-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
Mardin-----	Fragipan	14-26	14-65	Noncemented	Moderate
Edgemere-----	Fragipan	15-25	---	Noncemented	High
297198 Manlius-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
Mardin-----	Fragipan	14-26	14-65	Noncemented	Moderate
Edgemere-----	Fragipan	15-25	---	Noncemented	High
Rock outcrop-----	No restriction	---	---	---	---
297201 Oquaga-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate

Table 20.---Soil Features---Continued

Map unit symbol and soil name	Restrictive layer				Potential for frost action
	Kind	Depth to top	Thickness	Hardness	
297201 Wellsboro-----	Fragipan	In 14-26	In 14-65	Noncemented	High
Rock outcrop-----	No restriction	---	---	---	---
Lackawanna-----	No restriction	---	---	---	Moderate
Shohola-----	Fragipan	15-31	---	Noncemented	High
297203 Delaware-----	Lithic bedrock	72-99	---	Very strongly cemented	Moderate
Pope-----	No restriction	---	---	---	Moderate
Chenango-----	No restriction	---	---	---	Moderate
Barbour-----	No restriction	---	---	---	Moderate
297204 Delaware-----	Lithic bedrock	72-99	---	Very strongly cemented	Moderate
Chenango-----	No restriction	---	---	---	Moderate
Pope-----	No restriction	---	---	---	Moderate
Barbour-----	No restriction	---	---	---	Moderate
297205 Delaware-----	Lithic bedrock	72-99	---	Very strongly cemented	Moderate
Pope-----	No restriction	---	---	---	Moderate
Barbour-----	No restriction	---	---	---	Moderate
Chenango-----	No restriction	---	---	---	Moderate
297209 Philo-----	No restriction	---	---	---	Moderate
Barbour-----	No restriction	---	---	---	Moderate
Chenango-----	No restriction	---	---	---	Moderate
Wyalusing-----	No restriction	---	---	---	High

Table 20.---Soil Features---Continued

Map unit symbol and soil name	Restrictive layer				Potential for frost action
	Kind	Depth to top	Thickness	Hardness	
297210 Barbour-----	No restriction	In	In		
Pope-----	No restriction	---	---	---	Moderate
Philo-----	No restriction	---	---	---	Moderate
Delaware-----	Lithic bedrock	72-99	---	Very strongly cemented	Moderate
297216 Wurtsboro-----	Fragipan	17-28	---	Noncemented	Moderate
Edgemere-----	Fragipan	15-25	---	Noncemented	High
Shohola-----	Fragipan	15-31	---	Noncemented	High
Oquaga-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
297217 Wurtsboro-----	Fragipan	17-28	---	Noncemented	Moderate
Oquaga-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
Rock outcrop-----	No restriction	---	---	---	---
Edgemere-----	Fragipan	15-25	---	Noncemented	High
Shohola-----	Fragipan	15-31	---	Noncemented	High
297227 Arnot-----	Lithic bedrock	10-20	---	Very strongly cemented	Moderate
Rock outcrop-----	No restriction	---	---	---	---
Mardin-----	Fragipan	14-26	14-65	Noncemented	Moderate
Lackawanna-----	No restriction	---	---	---	Moderate
297228 Arnot-----	Lithic bedrock	10-20	---	Very strongly cemented	Moderate
Rock outcrop-----	No restriction	---	---	---	---

Table 20.---Soil Features---Continued

Map unit symbol and soil name	Kind	Restrictive layer			Potential for frost action
		Depth to top	Thickness	Hardness	
		In	In		
297228 Mardin-----	Fragipan	14-26	14-65	Noncemented	Moderate
Swartswood-----	Fragipan	28-36	---	Noncemented	Moderate
297229 Wyoming-----	No restriction	---	---	---	Low
Delaware-----	Lithic bedrock	72-99	---	Very strongly cemented	Moderate
Braceville-----	No restriction	---	---	---	Moderate
Suncook-----	No restriction	---	---	---	Low
297230 Wyoming-----	No restriction	---	---	---	Low
Delaware-----	Lithic bedrock	72-99	---	Very strongly cemented	Moderate
Braceville-----	No restriction	---	---	---	Moderate
Suncook-----	No restriction	---	---	---	Low
297231 Wyoming-----	No restriction	---	---	---	Low
Suncook-----	No restriction	---	---	---	Low
Delaware-----	Lithic bedrock	72-99	---	Very strongly cemented	Moderate
Braceville-----	No restriction	---	---	---	Moderate
297236 Suncook-----	No restriction	---	---	---	Low
Wyalusing-----	No restriction	---	---	---	High
297237 Mardin-----	Fragipan	14-26	14-65	Noncemented	Moderate
Manlius-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate

Table 20.--Soil Features--Continued

Map unit symbol and soil name	Restrictive layer				Potential for frost action
	Kind	Depth to top	Thickness	Hardness	
297237 Oquaga-----	Lithic bedrock	In 20-40	In ---		
Edgemere-----	Fragipan	15-25	---	Very strongly cemented	Moderate
Shohola-----	Fragipan	15-31	---	Noncemented	High
297238 Mardin-----	Fragipan	14-26	14-65	Noncemented	Moderate
Manlius-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
Oquaga-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
Edgemere-----	Fragipan	15-25	---	Noncemented	High
Shohola-----	Fragipan	15-31	---	Noncemented	High
297239 Mardin-----	Fragipan	14-26	14-65	Noncemented	Moderate
Manlius-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
Oquaga-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
Edgemere-----	Fragipan	15-25	---	Noncemented	High
Shohola-----	Fragipan	15-31	---	Noncemented	High
297240 Mardin-----	Fragipan	14-26	14-65	Noncemented	Moderate
Manlius-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
Oquaga-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
Edgemere-----	Fragipan	15-25	---	Noncemented	High
Shohola-----	Fragipan	15-31	---	Noncemented	High
297240 Mardin-----	Fragipan	14-26	14-65	Noncemented	Moderate
Manlius-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
Oquaga-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
Edgemere-----	Fragipan	15-25	---	Noncemented	High
Shohola-----	Fragipan	15-31	---	Noncemented	High
297240 Mardin-----	Fragipan	14-26	14-65	Noncemented	Moderate
Manlius-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
Oquaga-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
Edgemere-----	Fragipan	15-25	---	Noncemented	High
Shohola-----	Fragipan	15-31	---	Noncemented	High

Table 20.---Soil Features---Continued

Map unit symbol and soil name	Kind	Restrictive layer			Potential for frost action
		Depth to top	Thickness	Hardness	
297241 Unadilla-----	No restriction	In	In		
Braceville-----	No restriction	---	---	---	High
Suncook-----	No restriction	---	---	---	Moderate
297242 Shohola-----	Fragipan	18-30	---	Noncemented	High
Edgemere-----	Fragipan	15-25	---	Noncemented	High
Mardin-----	Fragipan	14-26	14-65	Noncemented	Moderate
297243 Shohola-----	Fragipan	18-30	---	Noncemented	High
Edgemere-----	Fragipan	15-25	---	Noncemented	High
Mardin-----	Fragipan	14-26	14-65	Noncemented	Moderate
297244 Lordstown-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
Swartswood-----	Fragipan	28-36	---	Noncemented	Moderate
Arnot-----	Lithic bedrock	10-20	---	Very strongly cemented	Moderate
Rock outcrop-----	No restriction	---	---	---	---
Shohola-----	Fragipan	15-31	---	Noncemented	High
297247 Chenango-----	No restriction	---	---	---	Moderate
Delaware-----	Lithic bedrock	72-99	---	Very strongly cemented	Moderate
Braceville-----	No restriction	---	---	---	Moderate
Philo-----	No restriction	---	---	---	Moderate
Unadilla-----	No restriction	---	---	---	High

Table 20.---Soil Features--Continued

Map unit symbol and soil name	Kind	Restrictive layer			Potential for frost action
		Depth to top	Thickness	Hardness	
297248 Chenango-----	No restriction	In	In	---	Moderate
Delaware-----	Lithic bedrock	72-99	---	Very strongly cemented	Moderate
Unadilla-----	No restriction	---	---	---	High
297249 Chenango-----	No restriction	---	---	---	Moderate
Delaware-----	Lithic bedrock	72-99	---	Very strongly cemented	Moderate
Unadilla-----	No restriction	---	---	---	High
297253 Craigs ville-----	No restriction	---	---	---	Moderate
Wyoming-----	No restriction	---	---	---	Low
Wyalusing-----	No restriction	---	---	---	High
Philo-----	No restriction	---	---	---	Moderate
Pope-----	No restriction	---	---	---	Moderate
297254 Pits, shale-----	Paralithic bedrock	0-2	---	Very strongly cemented	Low
Pits, gravel-----	No restriction	---	---	---	Low
298049 Wurtsboro, extremely stony-----	Fragipan	17-28	32-43	Noncemented	Moderate
Swartswood, extremely stony-----	Fragipan	20-36	24-40	Noncemented	Moderate
298050 Wurtsboro, extremely stony-----	Fragipan	17-28	32-43	Noncemented	Moderate
Swartswood, extremely stony-----	Fragipan	20-36	24-40	Noncemented	Moderate
298051 Wurtsboro, extremely stony-----	Fragipan	17-28	32-43	Noncemented	Moderate

Table 20.---Soil Features---Continued

Map unit symbol and soil name	Kind	Restrictive layer			Potential for frost action
		Depth to top	Thickness	Hardness	
		In	In		
298051 Swartswood, extremely stony-----	Fragipan	20-36	24-40	Noncemented	Moderate
298075 Colonie-----	No restriction	---	---	---	Low
Delaware-----	No restriction	---	---	---	Moderate
Unadilla-----	No restriction	---	---	---	High
298188 Lackawanna, extremely stony-----	Fragipan	14-36	20-45	Noncemented	Moderate
Wellisboro, extremely stony-----	Fragipan	12-30	30-48	Noncemented	Moderate
Oquaga, extremely stony-----	Lithic bedrock	20-39	---	Indurated	Moderate
298189 Lackawanna, extremely stony-----	Fragipan	14-36	20-45	Noncemented	Moderate
Wellisboro, extremely stony-----	Fragipan	12-30	30-48	Noncemented	Moderate
Oquaga, extremely stony-----	Lithic bedrock	20-39	---	Indurated	Moderate
298221 Swartswood, extremely stony-----	Fragipan	20-36	24-40	Noncemented	Moderate
Wurtsboro, extremely stony-----	Fragipan	17-28	32-43	Noncemented	Moderate
298222 Swartswood, extremely stony-----	Fragipan	20-36	24-40	Noncemented	Moderate
Wurtsboro, extremely stony-----	Fragipan	17-28	32-43	Noncemented	Moderate
298223 Swartswood, extremely stony-----	Fragipan	20-36	24-40	Noncemented	Moderate
Arnot, extremely stony-----	Lithic bedrock	10-20	---	Indurated	Moderate
Lordstown, extremely stony-----	Lithic bedrock	20-39	---	Indurated	Moderate
298255 Delaware, rarely flooded-----	No restriction	---	---	---	Moderate
Colonie-----	No restriction	---	---	---	Low



Table 20.--Soil Features--Continued

Map unit symbol and soil name	Restrictive layer				Potential for frost action
	Kind	Depth to top	Thickness	Hardness	
298255 Unadilla-----	No restriction	In	In	---	High
298256 Delaware, rarely flooded-----	No restriction	---	---	---	Moderate
Colonie-----	No restriction	---	---	---	Low
Unadilla-----	No restriction	---	---	---	High
298257 Wallpack-----	Fragipan	12-36	29-53	Noncemented	Moderate
Cambridge-----	Fragipan	12-36	29-53	Noncemented	Moderate
Lordstown-----	Lithic bedrock	20-39	---	Indurated	Moderate
298258 Wallpack-----	Fragipan	12-36	29-53	Noncemented	Moderate
Cambridge-----	Fragipan	12-36	29-53	Noncemented	Moderate
Lordstown-----	Lithic bedrock	20-39	---	Indurated	Moderate
298259 Wallpack, extremely stony-----	Fragipan	12-36	24-48	Noncemented	Moderate
Cambridge, extremely stony-----	Fragipan	12-36	23-47	Noncemented	Moderate
Lordstown, extremely stony-----	Lithic bedrock	20-39	---	Indurated	Moderate
298260 Wallpack, extremely stony-----	Fragipan	12-36	24-48	Noncemented	Moderate
Cambridge, extremely stony-----	Fragipan	16-30	10-36	Noncemented	Moderate
Lordstown, extremely stony-----	Lithic bedrock	20-39	---	Indurated	Moderate
298261 Wallpack-----	Fragipan	12-36	29-53	Noncemented	Moderate
Cambridge-----	Fragipan	12-36	29-53	Noncemented	Moderate
Lordstown-----	Lithic bedrock	20-39	---	Indurated	Moderate

Table 20.---Soil Features---Continued

Map unit symbol and soil name	Kind	Restrictive layer			Potential for frost action
		Depth to top	Thickness	Hardness	
		In	In		
298262 Wallpack, extremely stony-----	Fragipan	12-36	24-48	Noncemented	Moderate
Cambridge, extremely stony-----	Fragipan	16-30	10-36	Noncemented	Moderate
Lordstown, extremely stony-----	Lithic bedrock	20-39	---	Indurated	Moderate
298265 Venango, extremely stony-----	Fragipan	14-28	32-46	Noncemented	High
Chippewa, extremely stony-----	Fragipan	8-20	8-36	Noncemented	High
298266 Venango, extremely stony-----	Fragipan	14-28	32-46	Noncemented	High
Nassau, extremely stony-----	Lithic bedrock	10-20	---	Indurated	Moderate
Manlius, extremely stony-----	Lithic bedrock	20-39	---	Indurated	Moderate
298409 Swartswood, extremely stony-----	Fragipan	20-36	24-40	Noncemented	Moderate
Wurtsboro, extremely stony-----	Fragipan	17-28	32-43	Noncemented	Moderate
298411 Swartswood, extremely stony-----	Fragipan	20-36	24-40	Noncemented	Moderate
Wurtsboro, extremely stony-----	Fragipan	17-28	32-43	Noncemented	Moderate
298413 Swartswood, extremely stony-----	Fragipan	20-36	24-40	Noncemented	Moderate
Arnot, extremely stony-----	Lithic bedrock	10-20	---	Indurated	Moderate
Lordstown, extremely stony-----	Lithic bedrock	20-39	---	Indurated	Moderate
318498 Hazen, very stony-----	No restriction	---	---	---	Moderate
Hoosic, very stony-----	No restriction	---	---	---	Low
Otisville, very stony-----	No restriction	---	---	---	Low
318533 Hazen, very stony-----	No restriction	---	---	---	Moderate

Table 20.--Soil Features--Continued

Map unit symbol and soil name	Restrictive layer				Potential for frost action
	Kind	Depth to top	Thickness	Hardness	
318533 Hoosic, very stony-----	No restriction	In	In		
Hero, very stony-----	No restriction	---	---	---	Low
319783 Catden-----	No restriction	---	---	---	Moderate
Alden-----	No restriction	---	---	---	High
Wallkill-----	No restriction	---	---	---	High
319784 Fredon, very stony-----	Strongly contrasting textural stratification	22-40	20-38	Noncemented	High
Halsey, very stony-----	Strongly contrasting textural stratification	20-40	20-40	Noncemented	High
Hero, very stony-----	No restriction	---	---	---	Moderate
543222 Andover, extremely stony-----	Fragipan Lithic bedrock	16-28 72-99	---	Noncemented Very strongly cemented	High
Buchanan, extremely stony-----	Fragipan Lithic bedrock	20-36 60-99	---	Noncemented Very strongly cemented	Moderate
Laidig-----	Fragipan	30-50	---	Noncemented	Moderate
Hazleton-----	Lithic bedrock	40-80	---	Very strongly cemented	Moderate
543243 Berks-----	Lithic bedrock	20-40	---	Very strongly cemented	Low
Weikert-----	Lithic bedrock	10-20	---	Very strongly cemented	Moderate

Table 20.---Soil Features---Continued

Map unit symbol and soil name	Restrictive layer				Potential for frost action
	Kind	Depth to top	Thickness	Hardness	
543243 Bedington-----	Lithic bedrock	In	In		
		60-99	---	Very strongly cemented	Moderate
Comly-----	Fragipan	20-35	---	Noncemented	Moderate
	Lithic bedrock	52-96		Very strongly cemented	
Brinkerton-----	Fragipan	11-30	---	Noncemented	High
	Lithic bedrock	60-99		Very strongly cemented	
543246 Buchanan-----	Fragipan	20-36	---	Noncemented	Moderate
	Lithic bedrock	60-99		Very strongly cemented	
Andover-----	Fragipan	16-28	---	Noncemented	Moderate
	Lithic bedrock	72-99		Very strongly cemented	
Wharton-----	Lithic bedrock	40-72	---	Very strongly cemented	High
Laidig-----	Fragipan	28-50	---	Noncemented	Moderate
543247 Buchanan, extremely stony-----	Fragipan	20-36	---	Noncemented	Moderate
	Lithic bedrock	60-99		Very strongly cemented	
Andover, extremely stony-----	Fragipan	16-28	---	Noncemented	Moderate
	Lithic bedrock	72-99		Very strongly cemented	
Cookport-----	Fragipan	16-30	---	Noncemented	Moderate
	Lithic bedrock	40-72		Indurated	
Laidig-----	Fragipan	30-50	---	Noncemented	Moderate
Murrill-----	Lithic bedrock	72-99	---	Indurated	Moderate
543257 Chippewa-----	Fragipan	8-20	8-36	Noncemented	High
Swartswood-----	Fragipan	19-36	---	Noncemented	Moderate

Table 20.--Soil Features--Continued

Map unit symbol and soil name	Restrictive layer				Potential for frost action
	Kind	Depth to top	Thickness	Hardness	
543257 Wurtsboro-----	Fragipan Lithic bedrock	In 17-28 48-120	In ---	Noncemented Very strongly cemented	Moderate
543258 Chippewa-----	Fragipan	8-20	8-36	Noncemented	High
Swartswood-----	Fragipan	19-36	---	Noncemented	Moderate
Wurtsboro-----	Fragipan Lithic bedrock	17-28 48-120	---	Noncemented Very strongly cemented	Moderate
543259 Chippewa, extremely stony-----	Fragipan	8-20	8-36	Noncemented	High
Swartswood-----	Fragipan	19-36	---	Noncemented	Moderate
Wurtsboro-----	Fragipan Lithic bedrock	17-28 48-120	---	Noncemented Very strongly cemented	Moderate
543271 Delaware-----	Lithic bedrock	72-99	---	Very strongly cemented	Moderate
Alton-----	Lithic bedrock	60-99	---	Very strongly cemented	Moderate
Conotton-----	No restriction	---	---	---	Moderate
Hatboro-----	Lithic bedrock	60-99	---	Very strongly cemented	High
Nanticoke-----	Lithic bedrock	72-99	---	Very strongly cemented	Low
543276 Fluvaquents-----	Lithic bedrock	72-99	---	Very strongly cemented	High
Towhee-----	Fragipan Lithic bedrock	20-30 48-96	---	Noncemented Very strongly cemented	High

Table 20.---Soil Features---Continued

Map unit symbol and soil name	Restrictive layer				Potential for frost action
	Kind	Depth to top	Thickness	Hardness	
543276 Mount Lucas-----	Lithic bedrock	In	In		
		60-99	---	Very strongly cemented	High
Nanticoke-----	Lithic bedrock	72-99	---	Very strongly cemented	Low
Neshaminy-----	Lithic bedrock	48-99	---	Very strongly cemented	Moderate
543292 Hazleton, extremely stony-----	Lithic bedrock	40-80	---	Indurated	Moderate
Buchanan-----	Fragipan Lithic bedrock	20-36 60-99	---	Noncemented Very strongly cemented	Moderate
543293 Hazleton, extremely stony-----	Lithic bedrock	40-80	---	Indurated	Moderate
Buchanan-----	Fragipan Lithic bedrock	20-36 60-99	---	Noncemented Very strongly cemented	Moderate
543299 Laidig, extremely stony-----	Fragipan	30-50	---	Noncemented	Moderate
Andover-----	Fragipan Lithic bedrock	16-28 72-99	---	Noncemented Very strongly cemented	High
Buchanan-----	Fragipan Lithic bedrock	20-36 60-99	---	Noncemented Very strongly cemented	Moderate
Hazleton-----	Lithic bedrock	40-80	---	Very strongly cemented	Moderate
543300 Laidig, extremely stony-----	Fragipan	30-50	---	Noncemented	Moderate
Andover, extremely stony-----	Fragipan Lithic bedrock	16-28 72-99	---	Noncemented Very strongly cemented	High

Table 20.---Soil Features---Continued

Map unit symbol and soil name	Restrictive layer				Potential for frost action
	Kind	Depth to top	Thickness	Hardness	
543300 Buchanan-----	Fragipan Lithic bedrock	In 20-36 60-99	In ---	Noncemented Very strongly cemented	Moderate
Hazleton-----	Lithic bedrock	40-80	---	Very strongly cemented	Moderate
543304 Laidig-----	Fragipan	30-50	---	Noncemented	Moderate
Rubble land-----	Lithic bedrock	40-72	---	Very strongly cemented	None
Andover-----	Fragipan Lithic bedrock	16-28 72-99	---	Noncemented Very strongly cemented	High
Buchanan-----	Fragipan Lithic bedrock	20-36 60-99	---	Noncemented Very strongly cemented	Moderate
543318 Rubble land-----	Lithic bedrock	40-72	---	Indurated	None
Hazleton-----	Lithic bedrock	40-80	---	Very strongly cemented	---
Buchanan-----	Fragipan Lithic bedrock	20-36 60-99	---	Noncemented Very strongly cemented	Moderate
Clymer-----	Lithic bedrock	40-60	---	Very strongly cemented	---
Laidig-----	Fragipan	30-50	---	Noncemented	Moderate
543327 Swartswood-----	Fragipan	20-36	---	Noncemented	Moderate
Conotton-----	No restriction	---	---	---	Moderate
Chippewa-----	Fragipan	8-20	8-36	Noncemented	High
Manlius-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate

Table 20.---Soil Features---Continued

Map unit symbol and soil name	Kind	Restrictive layer			Potential for frost action
		Depth to top	Thickness	Hardness	
543328 Swartswood-----	Fragipan	In	In		
		20-36	---	Noncemented	Moderate
Conotton-----	No restriction	---	---	---	Moderate
Chippewa-----	Fragipan	8-20	8-36	Noncemented	High
Manlius-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
543330 Swartswood, extremely stony-----	Fragipan	20-36	---	Noncemented	Moderate
Wurtsboro, extremely stony-----	Fragipan	17-28	---	Noncemented	Moderate
	Lithic bedrock	60-120		Very strongly cemented	
Conotton-----	No restriction	---	---	---	Moderate
Manlius-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
Chippewa, extremely stony-----	Fragipan	8-20	8-36	Noncemented	High
543331 Swartswood, extremely stony-----	Fragipan	20-36	---	Noncemented	Moderate
Wurtsboro, extremely stony-----	Fragipan	17-28	---	Noncemented	Moderate
	Lithic bedrock	60-120		Very strongly cemented	
Conotton-----	No restriction	---	---	---	Moderate
Chippewa, extremely stony-----	Fragipan	8-20	8-36	Noncemented	High
543359 Volusia-----	Fragipan	10-22	---	Noncemented	High
Chippewa-----	Fragipan	8-20	8-36	Noncemented	High
Swartswood-----	Fragipan	19-36	---	Noncemented	Moderate
543360 Volusia, extremely stony-----	Fragipan	10-22	---	Noncemented	High
Chippewa, extremely stony-----	Fragipan	8-20	8-36	Noncemented	High



Table 20.--Soil Features--Continued

Map unit symbol and soil name	Restrictive layer				Potential for frost action
	Kind	Depth to top	Thickness	Hardness	
543360 Swartswood-----	Fragipan	In 19-36	In ---	Noncemented	Moderate
543374 Wurtsboro-----	Fragipan Lithic bedrock	17-28 60-120	---	Noncemented Very strongly cemented	Moderate
Chippewa-----	Fragipan	8-20	8-36	Noncemented	High
Conotton-----	No restriction	---	---	---	Moderate
Halsey-----	No restriction	---	---	---	High
Manlius-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
PHELPS-----	No restriction	---	---	---	High
543375 Wurtsboro-----	Fragipan Lithic bedrock	17-28 60-120	---	Noncemented Very strongly cemented	Moderate
Chippewa-----	Fragipan	8-20	8-36	Noncemented	High
Conotton-----	No restriction	---	---	---	Moderate
Halsey-----	No restriction	---	---	---	High
Manlius-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
PHELPS-----	No restriction	---	---	---	High
612280 Scio-----	No restriction	---	---	---	High
Unadilla-----	No restriction	---	---	---	High
Aeric Endoaquepts, postglacial alluvium-----	No restriction	---	---	---	High
612666 Colonie-----	No restriction	---	---	---	Low

Table 20.---Soil Features---Continued

Map unit symbol and soil name	Restrictive layer				Potential for frost action
	Kind	Depth to top	Thickness	Hardness	
612666 Delaware-----	No restriction	In	In		
Unadilla-----	No restriction			---	Moderate
612668 Hoosic, very stony-----	No restriction			---	High
Hazen, very stony-----	No restriction			---	Low
Otisville, very stony-----	No restriction			---	Moderate
Colonie, very stony-----	No restriction			---	Low
612724 Lordstown, very rocky-----	Lithic bedrock	20-39		Indurated	Moderate
Wallpack, very rocky-----	Fragipan	12-36	24-48	Noncemented	Moderate
Chadakoin, very rocky-----	Lithic bedrock	39-60		Indurated	Moderate
Rock outcrop-----	Lithic bedrock	0		Indurated	---
612732 Atherton, very poorly drained-----	No restriction			---	High
Atherton, poorly drained-----	No restriction			---	High
Aeric Endoaquepts, postglacial alluvium-----	No restriction			---	High
612738 Fluvaquents, occasionally flooded-----	No restriction			---	High
Udifuvents, occasionally flooded-----	No restriction			---	Low
612753 Wallpack, aeolian mantle, very stony--	No restriction			---	Moderate
Lordstown, very stony-----	Lithic bedrock	20-39		Indurated	Moderate
Aquic Dystrudepts, aeolian mantle, very stony-----	No restriction			---	Low
612756 Wallpack, aeolian mantle, very stony--	No restriction			---	Moderate

Table 20.---Soil Features---Continued

Map unit symbol and soil name	Kind	Restrictive layer			Potential for frost action
		Depth to top	Thickness	Hardness	
612756 Lordstown, very stony----- Aquic Dystrudepts, aeolian mantle, very stony-----	Lithic bedrock	In 20-39	In ---	Indurated	Moderate
612757 Wallpack, aeolian mantle, very stony----- Lordstown, very stony----- Aquic Dystrudepts, aeolian mantle, very stony-----	No restriction	---	---	---	Low
612767 Wellisboro, extremely stony----- Morris, extremely stony----- Lackawanna, extremely stony-----	No restriction	---	---	---	Moderate
612768 Wellisboro, extremely stony----- Morris, extremely stony----- Lackawanna, extremely stony-----	Lithic bedrock	20-39	---	Indurated	Moderate
613393 Alden, extremely stony----- Chippewa, extremely stony-----	No restriction	---	---	---	Low
613447 Unadilla----- Delaware----- Colonie----- 613448 Unadilla----- Delaware----- Colonie-----	Fragipan	12-30	30-48	Noncemented	Moderate
	Fragipan	10-30	15-40	Noncemented	High
	Fragipan	14-36	20-45	Noncemented	Moderate
	Fragipan	12-30	30-48	Noncemented	Moderate
	Fragipan	12-30	30-48	Noncemented	High
	Fragipan	14-36	20-45	Noncemented	Moderate
	No restriction	---	---	---	High
	Fragipan	8-20	8-36	Noncemented	High
	No restriction	---	---	---	High
	No restriction	---	---	---	Moderate
	No restriction	---	---	---	Low
	No restriction	---	---	---	High
	No restriction	---	---	---	Moderate
	No restriction	---	---	---	Low

Table 20.---Soil Features---Continued

Map unit symbol and soil name	Kind	Restrictive layer			Potential for frost action
		Depth to top	Thickness	Hardness	
		In	In		
614075 Wurtsboro, extremely stony-----	Fragipan	17-28	32-43	Noncemented	Moderate
Swartswood, extremely stony-----	Fragipan	20-36	24-40	Noncemented	Moderate
620179 Arnot, very rocky-----	Lithic bedrock	10-20	---	Indurated	Moderate
Lordstown, very rocky-----	Lithic bedrock	20-39	---	Indurated	Moderate
Rock outcrop-----	Lithic bedrock	0	---	Indurated	---
620180 Arnot-----	Lithic bedrock	10-20	---	Indurated	Moderate
Lordstown-----	Lithic bedrock	20-39	---	Indurated	Moderate
Rock outcrop-----	Lithic bedrock	0	---	Indurated	---
620181 Arnot-----	Lithic bedrock	10-20	---	Indurated	Moderate
Lordstown-----	Lithic bedrock	20-39	---	Indurated	Moderate
Rock outcrop-----	Lithic bedrock	0	---	Indurated	---
623089 Chippewa, extremely stony-----	Fragipan	8-20	8-36	Noncemented	High
Alden, extremely stony-----	No restriction	---	---	---	High
Venango, extremely stony-----	Fragipan	14-28	32-46	Noncemented	High
623109 Farmington-----	Lithic bedrock	10-20	---	Indurated	High
Rock outcrop-----	Lithic bedrock	0	---	Indurated	---
Galway-----	Lithic bedrock	20-39	---	Indurated	Moderate
624811 Galway, very rocky-----	Lithic bedrock	20-39	---	Indurated	Moderate
Farmington, very rocky-----	Lithic bedrock	10-20	---	Indurated	High
Rock outcrop-----	Lithic bedrock	0	---	Indurated	---

Table 20.--Soil Features--Continued

Map unit symbol and soil name	Kind	Restrictive layer			Potential for frost action
		Depth to top	Thickness	Hardness	
624811 Wallpack, aeolian mantle, very rocky--	No restriction	In	In	---	Moderate
624813 Lackawanna, extremely stony-----	Fragipan	14-36	20-45	Noncemented	Moderate
Wellsboro, extremely stony-----	Fragipan	12-30	30-48	Noncemented	Moderate
Oquaga, extremely stony-----	Lithic bedrock	20-39	---	Indurated	Moderate
624816 Lordstown, very rocky-----	Lithic bedrock	20-39	---	Indurated	Moderate
Wallpack, very rocky-----	Fragipan	12-36	24-48	Noncemented	Moderate
Cambridge, very rocky-----	Fragipan	12-36	23-47	Noncemented	Moderate
Chadakoin, very rocky-----	Lithic bedrock	39-60	---	Indurated	Moderate
Rock outcrop-----	Lithic bedrock	0	---	Indurated	---
624822 Lordstown-----	Lithic bedrock	20-39	---	Indurated	Moderate
Wallpack-----	Fragipan	12-36	29-53	Noncemented	Moderate
Chadakoin-----	Lithic bedrock	39-60	---	Indurated	Moderate
Cambridge-----	Fragipan	12-36	29-53	Noncemented	Moderate
624823 Lordstown-----	Lithic bedrock	20-39	---	Indurated	Moderate
Wallpack-----	Fragipan	12-36	29-53	Noncemented	Moderate
Chadakoin-----	Lithic bedrock	39-60	---	Indurated	Moderate
Cambridge-----	Fragipan	12-36	29-53	Noncemented	Moderate
624824 Lordstown-----	Lithic bedrock	20-39	---	Indurated	Moderate
Wallpack-----	Fragipan	12-36	29-53	Noncemented	Moderate
Chadakoin-----	Lithic bedrock	39-60	---	Indurated	Moderate
Cambridge-----	Fragipan	12-36	29-53	Noncemented	Moderate
624824 Lordstown-----	Lithic bedrock	20-39	---	Indurated	Moderate
Wallpack-----	Fragipan	12-36	29-53	Noncemented	Moderate
Chadakoin-----	Lithic bedrock	39-60	---	Indurated	Moderate
Cambridge-----	Fragipan	12-36	29-53	Noncemented	Moderate

Table 20.---Soil Features---Continued

Map unit symbol and soil name	Restrictive layer				Potential for frost action
	Kind	Depth to top	Thickness	Hardness	
624826 Manlius, very rocky-----	Lithic bedrock	In	In		
Nassau, very rocky-----	Lithic bedrock	20-39	---	Indurated	Moderate
Rock outcrop-----	Lithic bedrock	10-20	---	Indurated	Moderate
Wallpack, very rocky-----	Lithic bedrock	0	---	Indurated	---
624827 Nassau, very rocky-----	Fragipan	12-36	24-48	Noncemented	Moderate
Manlius, very rocky-----	Lithic bedrock	10-20	---	Indurated	Moderate
Rock outcrop-----	Lithic bedrock	20-39	---	Indurated	Moderate
624828 Nassau, very rocky-----	Lithic bedrock	0	---	Indurated	---
Manlius, very rocky-----	Lithic bedrock	10-20	---	Indurated	Moderate
Rock outcrop-----	Lithic bedrock	20-39	---	Indurated	Moderate
624829 Nassau, very rocky-----	Lithic bedrock	0	---	Indurated	---
Manlius, very rocky-----	Lithic bedrock	10-20	---	Indurated	Moderate
Rock outcrop-----	Lithic bedrock	20-39	---	Indurated	Moderate
624832 Nassau-----	Lithic bedrock	10-20	---	Indurated	Moderate
Rock outcrop-----	Lithic bedrock	20-39	---	Indurated	Moderate
Manlius-----	Lithic bedrock	0	---	Indurated	---
624841 Oquaga-----	Lithic bedrock	10-20	---	Indurated	Moderate
Rock outcrop-----	Lithic bedrock	0	---	Indurated	---
Arnot-----	Lithic bedrock	20-39	---	Indurated	Moderate
Lackawanna-----	Lithic bedrock	20-39	---	Indurated	Moderate
	Lithic bedrock	10-20	---	Indurated	Moderate
	Lithic bedrock	0	---	Indurated	---
	Lithic bedrock	10-20	---	Indurated	Moderate
	Lithic bedrock	14-36	20-45	Noncemented	Moderate

Table 20.---Soil Features---Continued

Map unit symbol and soil name	Restrictive layer				Potential for frost action
	Kind	Depth to top	Thickness	Hardness	
624845 Rock outcrop-----	Lithic bedrock	In	In		
		0	---	Indurated	---
Farmington-----	Lithic bedrock	10-20	---	Indurated	High
Galway-----	Lithic bedrock	20-39	---	Indurated	Moderate
624846 Rock outcrop-----	Lithic bedrock	0	---	Indurated	---
Arnot-----	Lithic bedrock	10-20	---	Indurated	Moderate
Rubble land-----	No restriction	---	---	---	---
Lordstown-----	Lithic bedrock	20-39	---	Indurated	Moderate
626816 Udifluents, occasionally flooded-----	No restriction	---	---	---	Low
Fluvaquents, occasionally flooded-----	No restriction	---	---	---	High
635458 Oquaga, very rocky-----	Lithic bedrock	20-39	---	Indurated	Moderate
Lackawanna, very rocky-----	Fragipan	14-36	20-45	Noncemented	Moderate
Rock outcrop-----	Lithic bedrock	0	---	Indurated	---
Wellsboro, very rocky-----	Fragipan	12-30	30-48	Noncemented	Moderate
635459 Oquaga, very rocky-----	Lithic bedrock	20-39	---	Indurated	Moderate
Lackawanna, very rocky-----	Fragipan	14-36	20-45	Noncemented	Moderate
Rock outcrop-----	Lithic bedrock	0	---	Indurated	---
Wellsboro, very rocky-----	Fragipan	12-30	30-48	Noncemented	Moderate
740953 Delaware, rarely flooded-----	No restriction	---	---	---	Moderate
Colonie-----	No restriction	---	---	---	Low
Unadilla-----	No restriction	---	---	---	High

Table 20.---Soil Features---Continued

Map unit symbol and soil name	Restrictive layer				Potential for frost action
	Kind	Depth to top	Thickness	Hardness	
740968		In	In		
Nassau, very rocky-----	Lithic bedrock	10-20	---	Indurated	Moderate
Manlius, very rocky-----	Lithic bedrock	20-39	---	Indurated	Moderate
Rock outcrop-----	Lithic bedrock	0	---	Indurated	---
740969					
Nassau, very rocky-----	Lithic bedrock	10-20	---	Indurated	Moderate
Manlius, very rocky-----	Lithic bedrock	20-39	---	Indurated	Moderate
Rock outcrop-----	Lithic bedrock	0	---	Indurated	---
740971					
Oquaga, very rocky-----	Lithic bedrock	20-39	---	Indurated	Moderate
Lackawanna, very rocky-----	Fragipan	14-36	20-45	Noncemented	Moderate
Rock outcrop-----	Lithic bedrock	0	---	Indurated	---
Wellsboro, very rocky-----	Fragipan	12-30	30-48	Noncemented	Moderate
740972					
Oquaga, very rocky-----	Lithic bedrock	20-39	---	Indurated	Moderate
Lackawanna, very rocky-----	Fragipan	14-36	20-45	Noncemented	Moderate
Rock outcrop-----	Lithic bedrock	0	---	Indurated	---
Wellsboro, very rocky-----	Fragipan	12-30	30-48	Noncemented	Moderate
740974					
Oquaga-----	Lithic bedrock	20-39	---	Indurated	Moderate
Rock outcrop-----	Lithic bedrock	0	---	Indurated	---
Arnot-----	Lithic bedrock	10-20	---	Indurated	Moderate
Lackawanna-----	Fragipan	14-36	20-45	Noncemented	Moderate
740975					
Rock outcrop-----	Lithic bedrock	0	---	Indurated	---
Arnot-----	Lithic bedrock	10-20	---	Indurated	Moderate



Table 20.---Soil Features---Continued

Map unit symbol and soil name	Restrictive layer				Potential for frost action
	Kind	Depth to top	Thickness	Hardness	
740975 Rubble land-----	No restriction	In	In	---	---
Lordstown-----	Lithic bedrock	20-39	---	Indurated	Moderate
740987 Scio-----	No restriction	---	---	---	High
Unadilla-----	No restriction	---	---	---	High
Aeric Endoaquepts, postglacial alluvium-----	No restriction	---	---	---	High
740988 Udifuvents, occasionally flooded-----	No restriction	---	---	---	Low
Fluvaquents, occasionally flooded-----	No restriction	---	---	---	High
740991 Unadilla-----	No restriction	---	---	---	High
Delaware-----	No restriction	---	---	---	Moderate
Colonie-----	No restriction	---	---	---	Low
740992 Unadilla-----	No restriction	---	---	---	High
Delaware-----	No restriction	---	---	---	Moderate
Colonie-----	No restriction	---	---	---	Low
740995 Wellisboro, extremely stony-----	Fragipan	12-30	30-48	Noncemented	Moderate
Morris, extremely stony-----	Fragipan	12-30	30-48	Noncemented	High
Lackawanna, extremely stony-----	Fragipan	14-36	20-45	Noncemented	Moderate
740996 Wellisboro, extremely stony-----	Fragipan	12-30	30-48	Noncemented	Moderate
Morris, extremely stony-----	Fragipan	10-30	15-40	Noncemented	High
Lackawanna, extremely stony-----	Fragipan	14-36	20-45	Noncemented	Moderate

Table 20.---Soil Features---Continued

Map unit symbol and soil name	Restrictive layer				Potential for frost action
	Kind	Depth to top	Thickness	Hardness	
741149 Lackawanna, extremely stony-----	Fragipan	In	In		
		14-36	20-45	Noncemented	Moderate
Wellisboro, extremely stony-----	Fragipan	12-30	30-48	Noncemented	Moderate
Oquaga, extremely stony-----	Lithic bedrock	20-39	---	Indurated	Moderate
741150 Lackawanna, extremely stony-----	Fragipan	14-36	20-45	Noncemented	Moderate
Wellisboro, extremely stony-----	Fragipan	12-30	30-48	Noncemented	Moderate
Oquaga, extremely stony-----	Lithic bedrock	20-39	---	Indurated	Moderate
801114 Oquaga-----	Lithic bedrock	20-39	---	Indurated	Moderate
Rock outcrop-----	Lithic bedrock	0	---	Indurated	---
Arnot-----	Lithic bedrock	10-20	---	Indurated	Moderate
Wellisboro-----	Fragipan	12-30	30-48	Noncemented	Moderate
810906 Oquaga-----	Lithic bedrock	20-39	---	Indurated	Moderate
Rock outcrop-----	Lithic bedrock	0	---	Indurated	---
Arnot-----	Lithic bedrock	10-20	---	Indurated	Moderate
Wellisboro-----	Fragipan	12-30	30-48	Noncemented	Moderate
1147465 Alden, extremely stony-----	No restriction	---	---	---	High
Chippewa, extremely stony-----	Fragipan	8-20	8-36	Noncemented	High
1147467 Arnot, very rocky-----	Lithic bedrock	10-20	---	Indurated	Moderate
Lordstown, very rocky-----	Lithic bedrock	20-39	---	Indurated	Moderate
Rock outcrop-----	Lithic bedrock	0	---	Indurated	---
1147468 Arnot-----	Lithic bedrock	10-20	---	Indurated	Moderate

Table 20.--Soil Features--Continued

Map unit symbol and soil name	Restrictive layer				Potential for frost action
	Kind	Depth to top	Thickness	Hardness	
1147468 Lordstown-----	Lithic bedrock	In 20-39	In	Indurated	Moderate
Rock outcrop-----	Lithic bedrock	0	---	Indurated	---
1147469 Arnot-----	Lithic bedrock	10-20	---	Indurated	Moderate
Lordstown-----	Lithic bedrock	20-39	---	Indurated	Moderate
Rock outcrop-----	Lithic bedrock	0	---	Indurated	---
1147470 Atherton, very poorly drained-----	No restriction	---	---	---	High
Atherton, poorly drained-----	No restriction	---	---	---	High
Aeric Endoaquepts, postglacial alluvium-----	No restriction	---	---	---	High
1147471 Catden-----	No restriction	---	---	---	High
Alden-----	No restriction	---	---	---	High
Wallkill-----	No restriction	---	---	---	High
1147474 Chippewa, extremely stony-----	Fragipan	8-20	8-36	Noncemented	High
Alden, extremely stony-----	No restriction	---	---	---	High
Venango, extremely stony-----	Fragipan	14-28	32-46	Noncemented	High
1147475 Colonie-----	No restriction	---	---	---	Low
Delaware-----	No restriction	---	---	---	Moderate
Unadilla-----	No restriction	---	---	---	High
1147478 Delaware, rarely flooded-----	No restriction	---	---	---	Moderate
Colonie-----	No restriction	---	---	---	Low
Unadilla-----	No restriction	---	---	---	High

Table 20.---Soil Features---Continued

Map unit symbol and soil name	Restrictive layer				Potential for frost action
	Kind	Depth to top	Thickness	Hardness	
1147482 Fredon, very stony-----	Strongly contrasting textural stratification	In 22-40	In 20-38	Noncemented	High
Halsey, very stony-----	Strongly contrasting textural stratification	20-40	20-40	Noncemented	High
Hero, very stony-----	No restriction	---	---	---	Moderate
1147485 Hazen, very stony-----	No restriction	---	---	---	Moderate
Hoosic, very stony-----	No restriction	---	---	---	Low
Otisville, very stony-----	No restriction	---	---	---	Low
1147490 Hoosic, very stony-----	No restriction	---	---	---	Low
Hazen, very stony-----	No restriction	---	---	---	Moderate
Otisville, very stony-----	No restriction	---	---	---	Low
Colonie, very stony-----	No restriction	---	---	---	Low
1147491 Hoosic, very stony-----	No restriction	---	---	---	Low
Otisville, very stony-----	No restriction	---	---	---	Low
Hazen, very stony-----	No restriction	---	---	---	Moderate
1147492 Lackawanna, extremely stony-----	Fragipan	14-36	20-45	Noncemented	Moderate
Wellsboro, extremely stony-----	Fragipan	12-30	30-48	Noncemented	Moderate
Oquaga, extremely stony-----	Lithic bedrock	20-39	---	Indurated	Moderate
1147500 Wurtsboro, extremely stony-----	Fragipan	17-28	32-43	Noncemented	Moderate
Swartswood, extremely stony-----	Fragipan	20-36	24-40	Noncemented	Moderate

Table 20.--Soil Features--Continued

Map unit symbol and soil name	Restrictive layer				Potential for frost action
	Kind	Depth to top	Thickness	Hardness	
1147501 Wurtsboro, extremely stony-----	Fragipan	In 17-28	In 32-43	Noncemented	Moderate
Swartswood, extremely stony-----	Fragipan	20-36	24-40	Noncemented	Moderate
1147502 Wurtsboro, extremely stony-----	Fragipan	17-28	32-43	Noncemented	Moderate
Swartswood, extremely stony-----	Fragipan	20-36	24-40	Noncemented	Moderate
1147527 Udorthents-----	No restriction	---	---	---	Low
Urban land-----	No restriction	---	---	---	---
1147532 Udorthents-----	No restriction	---	---	---	Low
1147533 Wurtsboro, extremely stony-----	Fragipan	17-28	32-43	Noncemented	Moderate
Swartswood, extremely stony-----	Fragipan	20-36	24-40	Noncemented	Moderate
1948749 Arnot-----	Lithic bedrock	10-20	---	Very strongly cemented	Moderate
Bedington-----	Lithic bedrock	60-99	---	Very strongly cemented	Moderate
Wurtsboro-----	Fragipan Lithic bedrock	17-28 48-120	---	Noncemented Very strongly cemented	Moderate
1948750 Arnot-----	Lithic bedrock	10-20	---	Very strongly cemented	Moderate
Brinkerton-----	Lithic bedrock	60-99	---	Very strongly cemented	Moderate
Wurtsboro-----	Fragipan Lithic bedrock	17-28 48-120	---	Noncemented Very strongly cemented	Moderate

Table 20.---Soil Features---Continued

Map unit symbol and soil name	Restrictive layer				Potential for frost action
	Kind	Depth to top	Thickness	Hardness	
1948751 Arnot-----	Lithic bedrock	In 10-20	In ---	Very strongly cemented	Moderate
Brinkerton-----	Lithic bedrock	60-99	---	Very strongly cemented	Moderate
Wurtsboro-----	Fragipan Lithic bedrock	17-28 48-120	---	Noncemented Very strongly cemented	Moderate
1948774 Conotton-----	No restriction	---	---	---	Moderate
1948775 Conotton-----	No restriction	---	---	---	Moderate
1948776 Conotton-----	No restriction	---	---	---	Moderate
1948777 Conotton-----	No restriction	---	---	---	Moderate
1948797 Manlius-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
Arnot-----	Lithic bedrock	10-20	---	Very strongly cemented	Moderate
Conotton-----	No restriction	---	---	---	Moderate
Loudonville-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
Swartswood-----	Fragipan	19-36	---	Noncemented	Moderate
Wurtsboro-----	Fragipan Lithic bedrock	17-28 48-120	---	Noncemented Very strongly cemented	Moderate
1948802 Manlius-----	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
Arnot-----	Lithic bedrock	10-20	---	Very strongly cemented	Moderate

Table 20.---Soil Features---Continued

Map unit symbol and soil name	Restrictive layer				Potential for frost action
	Kind	Depth to top	Thickness	Hardness	
1948802 Conotton	No restriction	In	In		
Loudonville	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
Swartswood	Fragipan	19-36	---	Noncemented	Moderate
Wurtsboro	Fragipan	17-28	---	Noncemented	Moderate
	Lithic bedrock	48-120		Very strongly cemented	
1948818 Manlius	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
Arnot	Lithic bedrock	10-20	---	Very strongly cemented	Moderate
Conotton	No restriction	---	---	---	Moderate
Loudonville	Lithic bedrock	20-40	---	Very strongly cemented	Moderate
Swartswood	Fragipan	19-36	---	Noncemented	Moderate
Wurtsboro	Fragipan	17-28	---	Noncemented	Moderate
	Lithic bedrock	48-120		Very strongly cemented	
1948832 Penargyl	Lithic bedrock	72-99	---	Moderately cemented	Moderate
1948846 Phelps	No restriction	---	---	---	High
Halsey	No restriction	---	---	---	High
Swartswood	Fragipan	19-36	---	Noncemented	Moderate
Wurtsboro	Fragipan	17-28	---	Noncemented	Moderate
	Lithic bedrock	48-120		Very strongly cemented	

Table 20.---Soil Features---Continued

Map unit symbol and soil name	Restrictive layer				Potential for frost action
	Kind	Depth to top	Thickness	Hardness	
1948855 Udorthents, loamy	No restriction	In	In	---	Moderate
Bedington	Lithic bedrock	60-99	---	Very strongly cemented	Moderate
Clarksburg	Fragipan	20-36	20-36	Noncemented	Moderate
	Lithic bedrock	60-99	---	Indurated	Moderate
Duffield	Lithic bedrock	48-120	---	Indurated	Moderate
Lansdale	Lithic bedrock	40-60	---	Very strongly cemented	Moderate
Readington	Fragipan	20-36	---	Noncemented	Moderate
	Lithic bedrock	40-70		Very strongly cemented	
1948989 Urban land	Lithic bedrock	10-100	---	Very strongly cemented	None
Delaware	Lithic bedrock	72-99	---	Very strongly cemented	Moderate



# Soil Survey of Delaware Water Gap National Recreation Area

Table 21.--Taxonomic Classification of the Soils

Soil name	Family or higher taxonomic class
Aeric Endoaquepts-----	Aeric Endoaquepts
Alden-----	Fine-loamy, mixed, active, nonacid, mesic Mollic Endoaquepts
Alton-----	Loamy-skeletal, mixed, active, mesic Dystric Eutrudepts
Alvira-----	Fine-loamy, mixed, active, mesic Aeric Fragiaquults
Andover-----	Fine-loamy, mixed, active, mesic Typic Fragiaquults
Aquic Dystrudepts-----	Aquic Dystrudepts
Arnot-----	Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts
Atherton taxadjunct----	Fine-silty, mixed, active, nonacid, mesic Aeric Endoaquepts
Barbour-----	Coarse-loamy over sandy or sandy-skeletal, mixed, active, mesic Fluventic Dystrudepts
Bath-----	Coarse-loamy, mixed, active, mesic Typic Fragiudepts
Bedington-----	Fine-loamy, mixed, active, mesic Typic Hapludults
Benson-----	Loamy-skeletal, mixed, active, mesic Lithic Eutrudepts
Berks-----	Loamy-skeletal, mixed, active, mesic Typic Dystrudepts
Braceville-----	Coarse-loamy, mixed, active, mesic Typic Fragiudepts
Brinkerton-----	Fine-silty, mixed, superactive, mesic Typic Fragiaquults
Brinkerton taxadjunct--	Fine-loamy, mixed, superactive, mesic Typic Hapludults
Buchanan-----	Fine-loamy, mixed, semiactive, mesic Aquic Fragiudults
Cambridge-----	Coarse-loamy, mixed, superactive, mesic Oxyaquic Fragiudalfs
Catden-----	Euic, mesic Typic Haplosaprists
Chadakoin-----	Coarse-loamy, mixed, superactive, mesic Typic Dystrudepts
Chenango-----	Loamy-skeletal, mixed, superactive, mesic Typic Dystrudepts
Chippewa-----	Fine-loamy, mixed, active, mesic Typic Fragiaquepts
Clarksburg-----	Fine-loamy, mixed, superactive, mesic Oxyaquic Fragiudalfs
Clymer-----	Coarse-loamy, siliceous, active, mesic Typic Hapludults
Colonie-----	Mixed, mesic Lamellic Udipsamments
Comly-----	Fine-loamy, mixed, active, mesic Oxyaquic Fragiudalfs
Conotton-----	Loamy-skeletal, mixed, active, mesic Typic Hapludalfs
Cookport-----	Fine-loamy, mixed, active, mesic Aquic Fragiudults
Craigsville-----	Loamy-skeletal, mixed, superactive, mesic Fluventic Dystrudepts
Dekalb-----	Loamy-skeletal, mixed, siliceous, active, mesic Typic Dystrudepts
Delaware-----	Coarse-loamy, mixed, active, mesic Typic Dystrudepts
Duffield-----	Fine-loamy, mixed, active, mesic Ultic Hapludalfs
Dystrochrepts-----	Typic Dystrochrepts
Edgemere-----	Loamy-skeletal, mixed, superactive, mesic Typic Fragiaquepts
Farmington-----	Loamy, mixed, active, mesic Lithic Eutrudepts
Fluvaquents-----	Fluvaquents
Fluvents-----	Fluvents
Fredon-----	Coarse-loamy over sandy or sandy-skeletal, mixed, active, nonacid, mesic Aeric Endoaquepts
Freetown-----	Dysic, mesic Typic Medisaprists
Galway-----	Coarse-loamy, mixed, superactive, mesic Typic Eutrudepts
Gleneyre-----	Coarse-silty over sandy or sandy-skeletal, mixed, active, nonacid, mesic Typic Fluvaquents
Halsey-----	Coarse-loamy over sandy or sandy-skeletal, mixed, active, nonacid, mesic Typic Humaquepts
Hatboro-----	Fine-loamy, mixed, active, nonacid, mesic Fluvaquentic Endoaquepts
Hazen-----	Coarse-loamy, mixed, active, mesic Mollic Hapludalfs
Hazleton-----	Loamy-skeletal, siliceous, active, mesic Typic Dystrudepts
Hero-----	Coarse-loamy over sandy or sandy-skeletal, mixed, semiactive, mesic Aquic Eutrudepts
Holly-----	Fine-loamy, mixed, superactive, nonacid, mesic Typic Fluvaquents
Hoosic taxadjunct-----	Sandy-skeletal, mixed, mesic Humic Dystrudepts
Kimbles-----	Coarse-silty over sandy or sandy-skeletal, mixed, mesic Typic Endoaquepts
Lackawanna-----	Coarse-loamy, mixed, active, mesic Typic Fragiudepts
Laidig-----	Fine-loamy, siliceous, active, mesic Typic Fragiudults
Lansdale-----	Coarse-loamy, mixed, active, mesic Typic Hapludults
Lordstown-----	Coarse-loamy, mixed, active, mesic Typic Dystrudepts
Loudonville-----	Fine-loamy, mixed, active, mesic Ultic Hapludalfs
Manlius-----	Loamy-skeletal, mixed, active, mesic Typic Dystrudepts
Mardin-----	Coarse-loamy, mixed, active, mesic Typic Fragiudepts
Meckesville-----	Fine-loamy, mixed, active, mesic Typic Fragiudults
Morris-----	Coarse-loamy, mixed, active, mesic Aeric Fragiaquepts
Mount Lucas-----	Fine-loamy, mixed, superactive, mesic Aquic Hapludalfs
Murrill-----	Fine-loamy, mixed, semiactive, mesic Typic Hapludults

# Soil Survey of Delaware Water Gap National Recreation Area

Table 21.--Taxonomic Classification of the Soils--Continued

Soil name	Family or higher taxonomic class
Nanticoke-----	Fine-silty, mixed, active, nonacid, mesic Typic Hydraquepts
Nassau-----	Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts
Neshaminy-----	Fine-loamy, mixed, superactive, mesic Ultic Hapludalfs
Norwich-----	Fine-loamy, mixed, active, mesic Typic Fragiaquepts
Oquaga-----	Loamy-skeletal, mixed, superactive, mesic Typic Dystrudepts
Otisville-----	Sandy-skeletal, mixed, mesic Typic Udorthents
Paupack-----	Loamy-skeletal or clayey-skeletal, mixed, dysic, mesic Terric Medisaprists
Penargyl-----	Fine-loamy, mixed, active, mesic Typic Hapludults
Phelps-----	Fine-loamy over sandy or sandy-skeletal, mixed, active, mesic Glossaquic Hapludalfs
Philo-----	Coarse-loamy, mixed, active, mesic Fluvaquentic Dystrudepts
Pope-----	Coarse-loamy, mixed, active, mesic Fluventic Dystrudepts
Readington-----	Fine-loamy, mixed, active, mesic Oxyaquic Fragiudalfs
Rexford-----	Coarse-loamy, mixed, active, mesic Aeric Fragiaquepts
Scio-----	Coarse-silty, mixed, active, mesic Aquic Dystrudepts
Sheffield taxadjunct---	Fine-silty, mixed, mesic Typic Fragiaqualfs
Shelmadine-----	Fine-loamy, mixed, semiactive, mesic Typic Fragiaquults
Shohola-----	Loamy-skeletal, mixed, mesic Aeric Fragiaquepts
Suncook-----	Mixed, mesic Typic Udipsamments
Swartswood-----	Coarse-loamy, mixed, active, mesic Typic Fragiudepts
Towhee-----	Fine-loamy, mixed, superactive, mesic Typic Fragiaqualfs
Udifluvents-----	Udifluvents
Udorthents, loamy-----	Udorthents
Udorthents-----	Udorthents
Unadilla-----	Coarse-silty, mixed, active, mesic Typic Dystrudepts
Venango-----	Fine-loamy, mixed, active, mesic Aeric Fragiaqualfs
Volusia-----	Fine-loamy, mixed, active, mesic Aeric Fragiaquepts
Wallkill taxadjunct---	Fine-loamy, mixed, superactive, nonacid, mesic Fluvaquentic Endoaquepts
Wallpack-----	Coarse-loamy, mixed, semiactive, mesic Typic Fragiudalfs
Wallpack taxadjunct---	Coarse-loamy, mixed, semiactive, mesic Typic Hapludalfs
Watson-----	Fine-loamy, mixed, active, mesic Typic Fragiudults
Wayland-----	Fine-silty, mixed, active, nonacid, mesic Mollic Fluvaquents
Weikert-----	Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts
Wellsboro-----	Coarse-loamy, mixed, active, mesic Typic Fragiudepts
Wharton-----	Fine-loamy, mixed, active, mesic Aquic Hapludults
Wurtsboro-----	Coarse-loamy, mixed, active, mesic Typic Fragiudepts
Wyalusing-----	Coarse-loamy over sandy or sandy-skeletal, mixed, active, nonacid, mesic Typic Fluvaquents
Wyoming-----	Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

# Soil Survey of Delaware Water Gap National Recreation Area

Table 22.--Soil Classification Key

[An asterisk indicates a taxadjunct to the series]

ORDER	
Suborder	
Great Group	
Subgroup	
Series or Higher Category	
ALFISOLS	
Aqualfs	
Fragiaqualfs	
Typic Fragiaqualfs	
Towhee-----	Fine-loamy, mixed, superactive, mesic Typic Fragiaqualfs
*Sheffield-----	Fine-silty, mixed, mesic Typic Fragiaqualfs
Brinkerton-----	Fine-silty, mixed, superactive, mesic Typic Fragiaqualfs
Aeric Fragiaqualfs	
Venango-----	Fine-loamy, mixed, active, mesic Aeric Fragiaqualfs
Udalfs	
Fragiudalfs	
Typic Fragiudalfs	
Wallpack-----	Coarse-loamy, mixed, semiactive, mesic Typic Fragiudalfs
Oxyaquic Fragiudalfs	
Cambridge-----	Coarse-loamy, mixed, superactive, mesic Oxyaquic Fragiudalfs
Comly-----	Fine-loamy, mixed, active, mesic Oxyaquic Fragiudalfs
Readington-----	Fine-loamy, mixed, active, mesic Oxyaquic Fragiudalfs
Clarksburg-----	Fine-loamy, mixed, superactive, mesic Oxyaquic Fragiudalfs
Hapludalfs	
Typic Hapludalfs	
*Wallpack-----	Coarse-loamy, mixed, semiactive, mesic Typic Hapludalfs
Conotton-----	Loamy-skeletal, mixed, active, mesic Typic Hapludalfs
Aquic Hapludalfs	
Mount Lucas-----	Fine-loamy, mixed, superactive, mesic Aquic Hapludalfs
Glossaquic Hapludalfs	
Phelps-----	Fine-loamy over sandy or sandy-skeletal, mixed, active, mesic Glossaquic Hapludalfs
Mollic Hapludalfs	
Hazen-----	Coarse-loamy, mixed, active, mesic Mollic Hapludalfs
Ultic Hapludalfs	
Duffield-----	Fine-loamy, mixed, active, mesic Ultic Hapludalfs
Loudonville-----	Fine-loamy, mixed, active, mesic Ultic Hapludalfs
Neshaminy-----	Fine-loamy, mixed, superactive, mesic Ultic Hapludalfs
ENTISOLS	
Aquents	
Fluvaquents	
Fluvaquents-----	Fluvaquents
Typic Fluvaquents	
Wyalusing-----	Coarse-loamy over sandy or sandy-skeletal, mixed, active, nonacid, mesic Typic Fluvaquents
Gleneyre-----	Coarse-silty over sandy or sandy-skeletal, mixed, active, nonacid, mesic Typic Fluvaquents
Holly-----	Fine-loamy, mixed, superactive, nonacid, mesic Typic Fluvaquents
Mollic Fluvaquents	
Wayland-----	Fine-silty, mixed, active, nonacid, mesic Mollic Fluvaquents
Hydraquents	
Typic Hydraquents	
Nanticoke-----	Fine-silty, mixed, active, nonacid, mesic Typic Hydraquents
Fluvents	
Fluvents-----	Fluvents
Udifuvents	
Udifuvents-----	Udifuvents
Orthents	
Udorthents	
Udorthents-----	Udorthents
Udorthents, loamy-----	Udorthents
Typic Udorthents	
Otisville-----	Sandy-skeletal, mixed, mesic Typic Udorthents

# Soil Survey of Delaware Water Gap National Recreation Area

Table 22.--Soil Classification Key--Continued

ORDER	
Suborder	
Great Group	
Subgroup	
Series or Higher Category	
ENTISOLS-- (Continued)	
Psamments	
Udipsamments	
Typic Udipsamments	
Suncook-----	Mixed, mesic Typic Udipsamments
Lamellic Udipsamments	
Colonie-----	Mixed, mesic Lamellic Udipsamments
HISTOSOLS	
Saprists	
Medisaprists	
Typic Medisaprists	
Freetown-----	Dysic, mesic Typic Medisaprists
Terric Medisaprists	
Paupack-----	Loamy-skeletal or clayey-skeletal, mixed, dysic, mesic Terric Medisaprists
Haplosaprists	
Typic Haplosaprists	
Catden-----	Euic, mesic Typic Haplosaprists
INCEPTISOLS	
Aquepts	
Fragiaquepts	
Typic Fragiaquepts	
Chippewa-----	Fine-loamy, mixed, active, mesic Typic Fragiaquepts
Norwich-----	Fine-loamy, mixed, active, mesic Typic Fragiaquepts
Edgemere-----	Loamy-skeletal, mixed, superactive, mesic Typic Fragiaquepts
Aeric Fragiaquepts	
Morris-----	Coarse-loamy, mixed, active, mesic Aeric Fragiaquepts
Rexford-----	Coarse-loamy, mixed, active, mesic Aeric Fragiaquepts
Volusia-----	Fine-loamy, mixed, active, mesic Aeric Fragiaquepts
Shohola-----	Loamy-skeletal, mixed, active, mesic Aeric Fragiaquepts
Humaquepts	
Typic Humaquepts	
Halsey-----	Coarse-loamy over sandy or sandy-skeletal, mixed, active, nonacid, mesic Typic Humaquepts
Endoaquepts	
Typic Endoaquepts	
Kimbles-----	Coarse-silty over sandy or sandy-skeletal, mixed, mesic Typic Endoaquepts
Aeric Endoaquepts	
Aeric Endoaquepts-----	Aeric Endoaquepts
Fredon-----	Coarse-loamy over sandy or sandy-skeletal, mixed, active, nonacid, mesic Aeric Endoaquepts
*Atherton-----	Fine-silty, mixed, active, nonacid, mesic Aeric Endoaquepts
Mollic Endoaquepts	
Alden-----	Fine-loamy, mixed, active, nonacid, mesic Mollic Endoaquepts
Fluvaquentic Endoaquepts	
Hatboro-----	Fine-loamy, mixed, active, nonacid, mesic Fluvaquentic Endoaquepts
*Wallkill-----	Fine-loamy, mixed, superactive, nonacid, mesic Fluvaquentic Endoaquepts
Ochrepts	
Dystrochrepts	
Typic Dystrochrepts	
Dystrochrepts-----	Typic Dystrochrepts
Udepts	
Dystrudepts	
Lithic Dystrudepts	
Arnot-----	Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts
Nassau-----	Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts
Weikert-----	Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts

# Soil Survey of Delaware Water Gap National Recreation Area

Table 22.--Soil Classification Key--Continued

ORDER	
Suborder	
Great Group	
Subgroup	
Series or Higher Category	
INCEPTISOLS-- (Continued)	
Dystrudepts	
Aquic Dystrudepts	
Aquic Dystrudepts-----	Aquic Dystrudepts
Scio-----	Coarse-silty, mixed, active, mesic Aquic Dystrudepts
Fluventic Dystrudepts	
Barbour-----	Coarse-loamy over sandy or sandy-skeletal, mixed, active, mesic Fluventic Dystrudepts
Pope-----	Coarse-loamy, mixed, active, mesic Fluventic Dystrudepts
Craigsville-----	Loamy-skeletal, mixed, superactive, mesic Fluventic Dystrudepts
Fluvaquentic Dystrudepts	
Philo-----	Coarse-loamy, mixed, active, mesic Fluvaquentic Dystrudepts
Humic Dystrudepts	
*Hoosic-----	Sandy-skeletal, mixed, mesic Humic Dystrudepts
Typic Dystrudepts	
Delaware-----	Coarse-loamy, mixed, active, mesic Typic Dystrudepts
Lordstown-----	Coarse-loamy, mixed, active, mesic Typic Dystrudepts
Chadakoin-----	Coarse-loamy, mixed, superactive, mesic Typic Dystrudepts
Unadilla-----	Coarse-silty, mixed, active, mesic Typic Dystrudepts
Berks-----	Loamy-skeletal, mixed, active, mesic Typic Dystrudepts
Chenango-----	Loamy-skeletal, mixed, superactive, mesic Typic Dystrudepts
Dekalb-----	Loamy-skeletal, mixed, siliceous, active, mesic Typic Dystrudepts
Hazleton-----	Loamy-skeletal, siliceous, active, mesic Typic Dystrudepts
Manlius-----	Loamy-skeletal, mixed, active, mesic Typic Dystrudepts
Oquaga-----	Loamy-skeletal, mixed, superactive, mesic Typic Dystrudepts
Wyoming-----	Loamy-skeletal, mixed, active, mesic Typic Dystrudepts
Eutrudepts	
Lithic Eutrudepts	
Benson-----	Loamy-skeletal, mixed, mesic Lithic Eutrudepts
Farmington-----	Loamy, mixed, active, mesic Lithic Eutrudepts
Aquic Eutrudepts	
Hero-----	Coarse-loamy over sandy or sandy-skeletal, mixed, semiactive, mesic Aquic Eutrudepts
Dystric Eutrudepts	
Alton-----	Loamy-skeletal, mixed, active, mesic Dystric Eutrudepts
Typic Eutrudepts	
Galway-----	Coarse-loamy, mixed, superactive, mesic Typic Eutrudepts
Fragiudepts	
Typic Fragiudepts	
Bath-----	Coarse-loamy, mixed, active, mesic Typic Fragiudepts
Braceville-----	Coarse-loamy, mixed, active, mesic Typic Fragiudepts
Lackawanna-----	Coarse-loamy, mixed, active, mesic Typic Fragiudepts
Mardin-----	Coarse-loamy, mixed, active, mesic Typic Fragiudepts
Swartswood-----	Coarse-loamy, mixed, active, mesic Typic Fragiudepts
Wellsboro-----	Coarse-loamy, mixed, active, mesic Typic Fragiudepts
Wurtsboro-----	Coarse-loamy, mixed, active, mesic Typic Fragiudepts
ULTISOLS	
Aquults	
Fragiaquults	
Typic Fragiaquults	
Andover-----	Fine-loamy, mixed, active, mesic Typic Fragiaquults
Shelmadine-----	Fine-loamy, mixed, semiactive, mesic Typic Fragiaquults
Aeric Fragiaquults	
Alvira-----	Fine-loamy, mixed, active, mesic Aeric Fragiaquults
Udults	
Fragiudults	
Typic Fragiudults	
Meckesville-----	Fine-loamy, mixed, active, mesic Typic Fragiudults
Watson-----	Fine-loamy, mixed, active, mesic Typic Fragiudults
Laidig-----	Fine-loamy, siliceous, active, mesic Typic Fragiudults

# Soil Survey of Delaware Water Gap National Recreation Area

Table 22.--Soil Classification Key--Continued

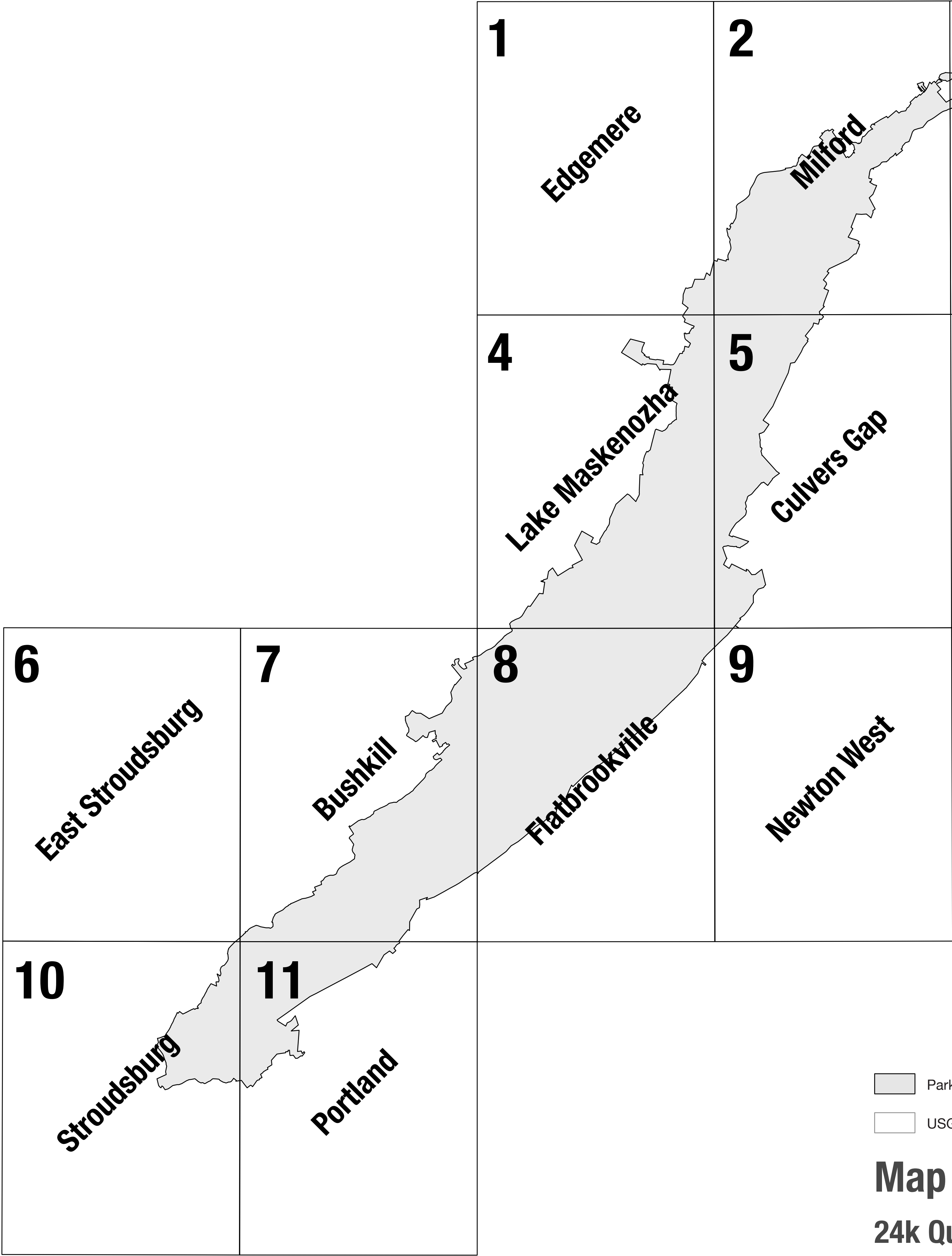
ORDER	
Suborder	
Great Group	
Subgroup	
Series or Higher Category	
ULTISOLS-- (Continued)	
Aquic Fragiudults	
Cookport-----	Fine-loamy, mixed, active, mesic Aquic Fragiudults
Buchanan-----	Fine-loamy, mixed, semiactive, mesic Aquic Fragiudults
Hapludults	
Typic Hapludults	
Lansdale-----	Coarse-loamy, mixed, active, mesic Typic Hapludults
Clymer-----	Coarse-loamy, siliceous, active, mesic Typic Hapludults
Bedington-----	Fine-loamy, mixed, active, mesic Typic Hapludults
Penargyl-----	Fine-loamy, mixed, active, mesic Typic Hapludults
Murrill-----	Fine-loamy, mixed, semiactive, mesic Typic Hapludults
*Brinkerton-----	Fine-loamy, mixed, superactive, mesic Typic Hapludults
Aquic Hapludults	
Wharton-----	Fine-loamy, mixed, active, mesic Aquic Hapludults



# Accessibility Statement

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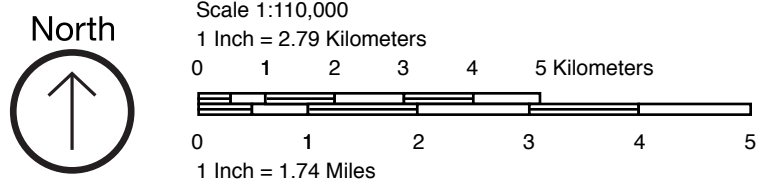
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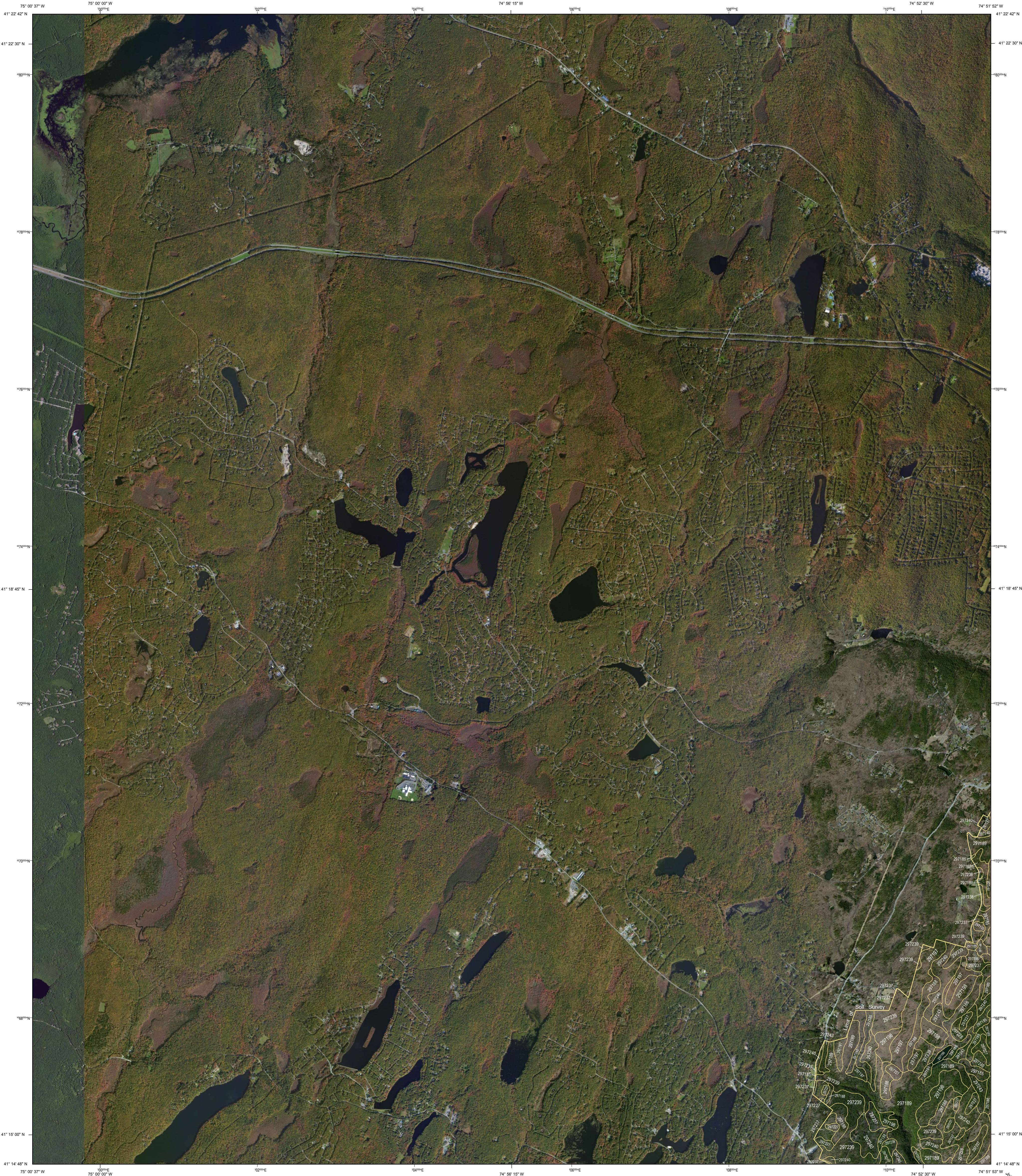


 Park Boundary (2012)  
 USGS 24k Quadrangle

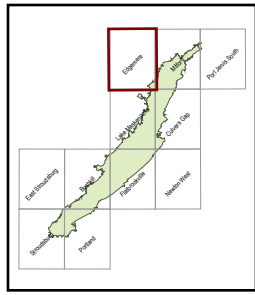
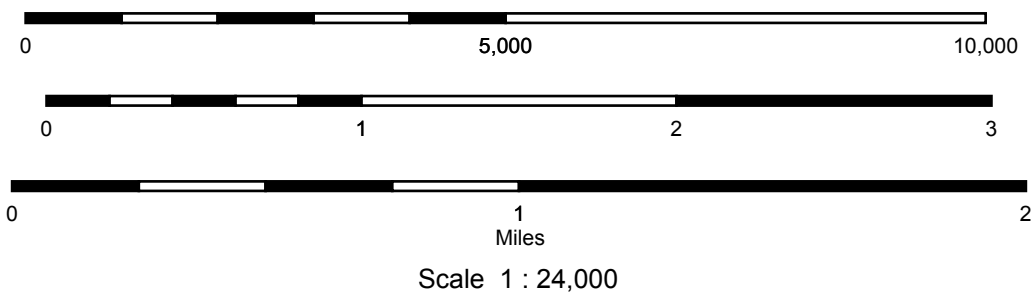
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**24k Quadrangle Name**







This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, at the request of the Department of the Interior, National Park Service. Base maps are orthophotographs prepared by the U.S. Department of Agriculture, Farm Service Agency from 2006 - 2011 aerial photographs. A 2012 National Park Service boundary was used. Soil information was derived from USDA/NRCS Soil Survey Geographic (SSURGO) database for Delaware Water Gap National Recreation Area, Universal Transverse Mercator Zone 18 North, North American Datum of 1983 (NAD83).



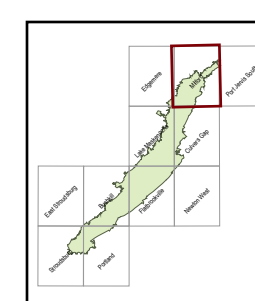
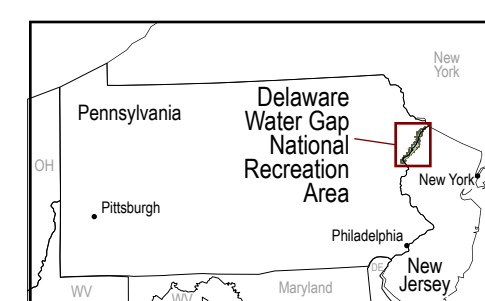
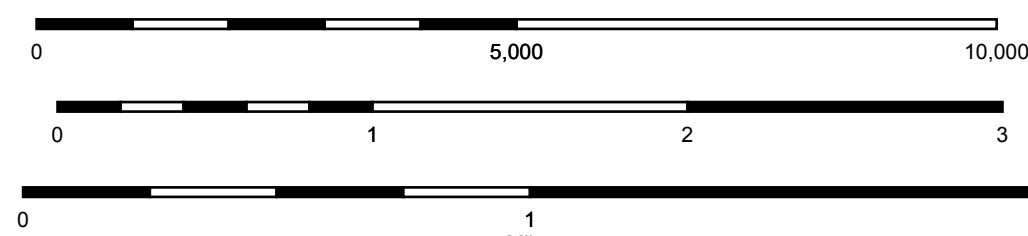


UNITED STATES DEPARTMENT OF AGRICULTURE  
NATURAL RESOURCES CONSERVATION SERVICE

SOIL SURVEY OF DELAWARE WATER GAP NATIONAL RECREATION AREA, NEW JERSEY, PENNSYLVANIA  
MILFORD QUADRANGLE  
SHEET NUMBER 2 OF 11



This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, at the request of the Department of the Interior, National Park Service. Park Boundary information was obtained from the National Park Service. Soil information was derived from USDA/NRCS Soil Survey Geographic (SSURGO) database for Delaware Water Gap National Recreation Area, 2011. Universal Transverse Mercator Zone 18 North, North American Datum of 1983 (NAD83).



Delaware Water Gap  
National Recreation Area,  
New Jersey, Pennsylvania

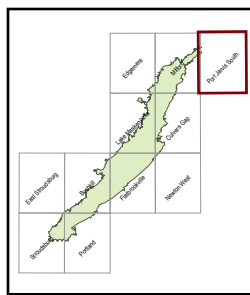
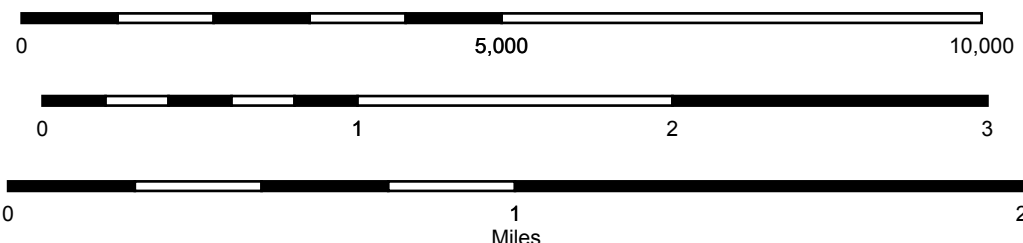
Sheet 2 of 11

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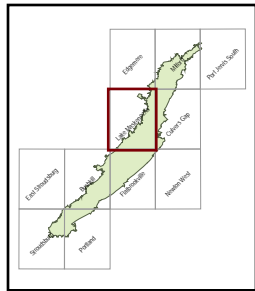
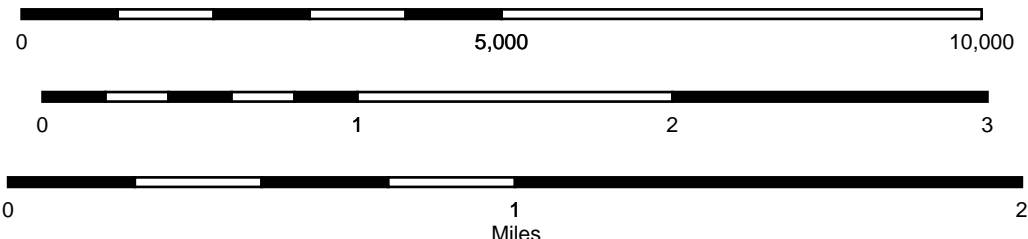
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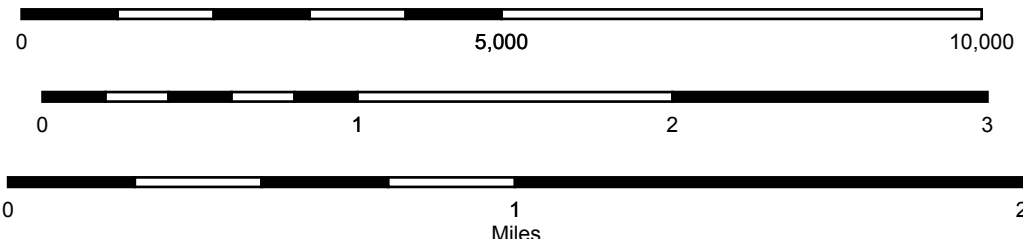
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NATIONAL PARK SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE  
NATURAL RESOURCES CONSERVATION SERVICE

SOIL SURVEY OF DELAWARE WATER GAP NATIONAL RECREATION AREA, NEW JERSEY, PENNSYLVANIA  
CULVERS GAP QUADRANGLE  
SHEET NUMBER 5 OF 11



This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, at the request of the Department of the Interior, National Park Service. Base maps are orthophotographs prepared by the U.S. Department of Agriculture, Farm Service Agency from 2006 - 2011 aerial photographs. A 2012 National Park Service boundary was used. Soil information was derived from USDA/NRCS Soil Survey Geographic (SSURGO) database for Delaware Water Gap National Recreation Area, Universal Transverse Mercator Zone 18 North, North American Datum of 1983 (NAD83).



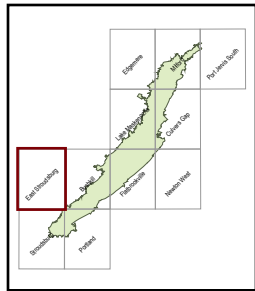
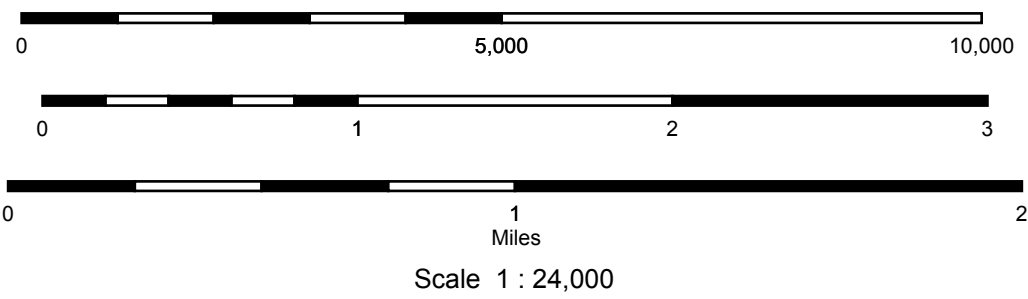
Delaware Water Gap  
National Recreation Area,  
New Jersey, Pennsylvania  
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Joins sheet 7, Bushkill  
Joins sheet 11, Pocono

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Delaware Water Gap  
National Recreation Area,  
New Jersey, Pennsylvania  
Sheet 6 of 11

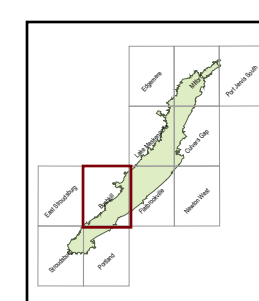
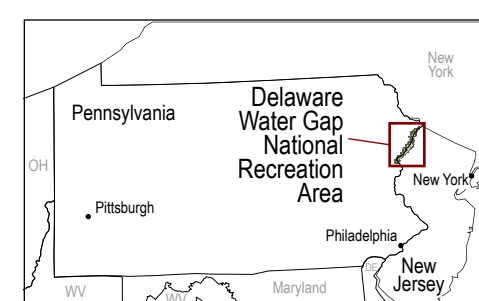
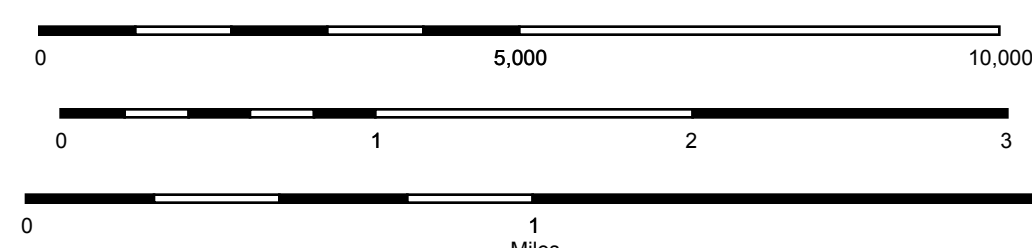


UNITED STATES DEPARTMENT OF AGRICULTURE  
NATURAL RESOURCES CONSERVATION SERVICE

SOIL SURVEY OF DELAWARE WATER GAP NATIONAL RECREATION AREA, NEW JERSEY, PENNSYLVANIA  
BUSHKILL QUADRANGLE  
SHEET NUMBER 7 OF 11



This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service, at the request of the Department of the Interior, National Park Service. Base maps are orthorectified, prepared by the U.S. Department of Agriculture, Farm Service Agency from 2006 - 2011 aerial photographs. A 2012 National Park Service boundary was used. Soil information was derived from USDA/NRCS Soil Survey Geographic (SSURGO) database for Delaware Water Gap National Recreation Area. Universal Transverse Mercator Zone 18 North, North American Datum of 1983 (NAD83).



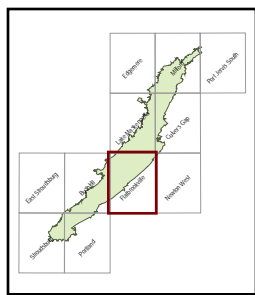
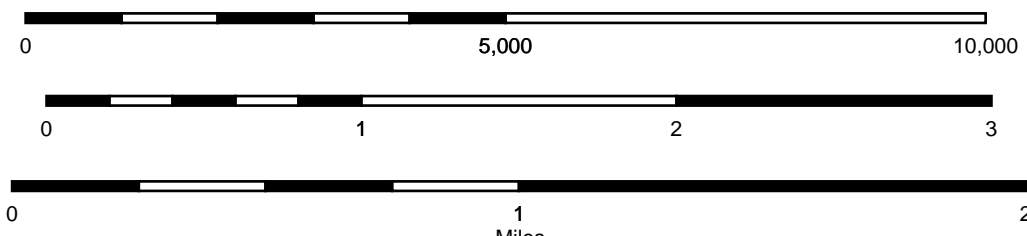
Delaware Water Gap  
National Recreation Area,  
New Jersey, Pennsylvania

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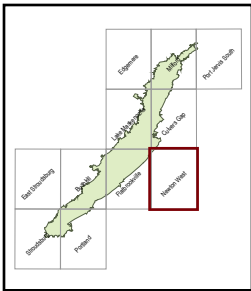
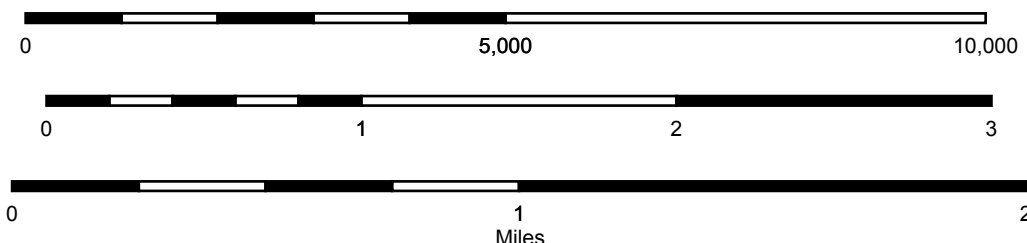
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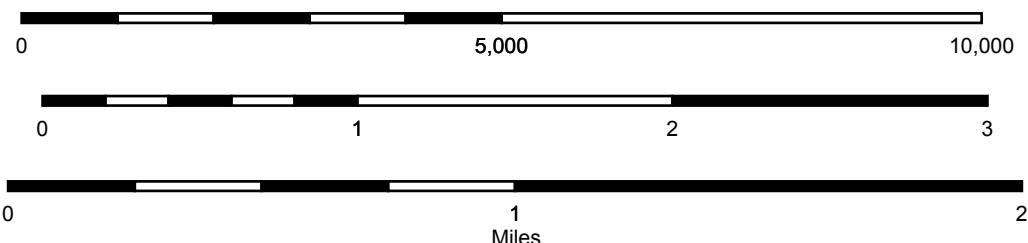
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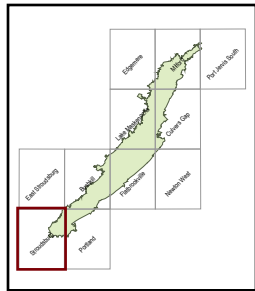




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Delaware Water Gap  
National Recreation Area,  
New Jersey, Pennsylvania

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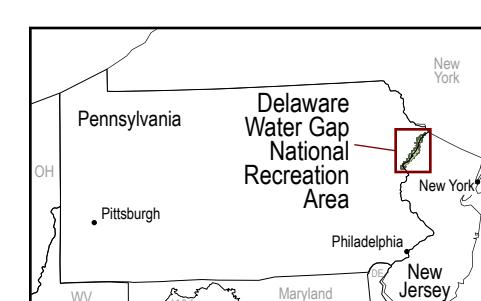
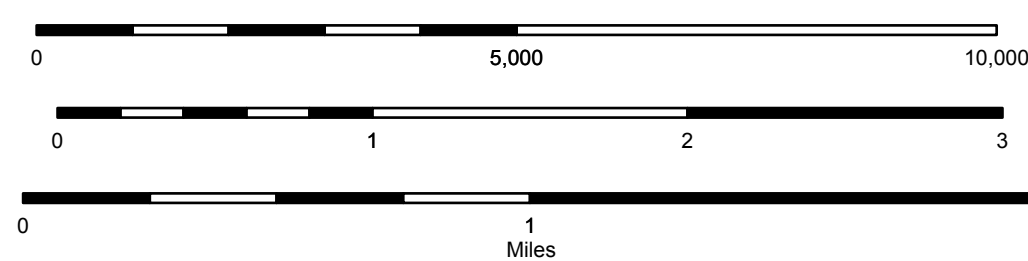


UNITED STATES DEPARTMENT OF AGRICULTURE  
NATURAL RESOURCES CONSERVATION SERVICE

SOIL SURVEY OF DELAWARE WATER GAP NATIONAL RECREATION AREA, NEW JERSEY, PENNSYLVANIA  
PORTLAND QUADRANGLE  
SHEET NUMBER 11 OF 11



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Delaware Water Gap  
National Recreation Area,  
New Jersey, Pennsylvania

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# Soil Legend

## Delaware Water Gap National Recreation Area, New Jersey & Pennsylvania

### Soil Survey Areas NJ037, NJ041, PA089, PA095, PA103

Soil Map Unit Key	Soil Survey Code	Soil Map Unit Name
290836	NJ037	Hoosic-Otisville complex, 25 to 60 percent slopes, very stony
296265	PA089	Alden mucky silt loam
296269	PA089	Alluvial land
296271	PA089	Alvira and Watson very stony loams, 0 to 12 percent slopes
296272	PA089	Bath channery silt loam, 3 to 8 percent slopes
296273	PA089	Bath channery silt loam, 8 to 15 percent slopes
296274	PA089	Bath channery silt loam, 15 to 25 percent slopes
296275	PA089	Bath very stony silt loam, 0 to 8 percent slopes
296276	PA089	Bath very stony silt loam, 8 to 25 percent slopes
296277	PA089	Benson-Rock outcrop complex, 0 to 8 percent slopes
296278	PA089	Benson-Rock outcrop complex, 8 to 25 percent slopes
296279	PA089	Benson-Rock outcrop complex, 25 to 70 percent slopes
296280	PA089	Braceville gravelly loam, 0 to 3 percent slopes
296281	PA089	Braceville gravelly loam, 3 to 8 percent slopes
296283	PA089	Buchanan extremely stony loam, 0 to 8 percent slopes
296288	PA089	Chippewa and Norwich silt loams, 0 to 5 percent slopes
296289	PA089	Chippewa and Norwich extremely stony soils, 0 to 8 percent slopes
296295	PA089	Cut and fill land
296297	PA089	Dekalb extremely stony loam, 8 to 25 percent slopes
296298	PA089	Dekalb extremely stony loam, 25 to 80 percent slopes
296303	PA089	Hazleton extremely stony sandy loam, 8 to 25 percent slopes
296304	PA089	Holly silt loam
296311	PA089	Lackawanna and Bath extremely stony soils, steep
296312	PA089	Lackawanna channery loam, 2 to 8 percent slopes
296313	PA089	Lackawanna channery loam, 8 to 15 percent slopes
296315	PA089	Lackawanna extremely stony loam, 0 to 8 percent slopes
296316	PA089	Lackawanna extremely stony loam, 8 to 25 percent slopes
296317	PA089	Laidig extremely stony loam, 0 to 8 percent slopes
296326	PA089	Lordstown extremely stony silt loam, 0 to 8 percent slopes
296327	PA089	Lordstown extremely stony silt loam, 8 to 25 percent slopes
296328	PA089	Lordstown and Oquaga extremely stony soils, 25 to 70 percent slopes
296329	PA089	Mardin channery silt loam, 2 to 8 percent slopes
296330	PA089	Mardin channery silt loam, 8 to 15 percent slopes
296331	PA089	Mardin very stony silt loam, 0 to 8 percent slopes
296332	PA089	Mardin very stony silt loam, 8 to 25 percent slopes
296335	PA089	Meckesville gravelly loam, 8 to 15 percent slopes
296337	PA089	Meckesville very stony loam, 8 to 25 percent slopes
296338	PA089	Morris channery silt loam, 2 to 10 percent slopes
296339	PA089	Morris extremely stony silt loam, 0 to 8 percent slopes
296340	PA089	Morris extremely stony silt loam, 8 to 20 percent slopes
296341	PA089	Mucky peat, deep

Soil Map Unit Key	Soil Survey Code	Soil Map Unit Name
296342	PA089	Mucky peat, shallow
296343	PA089	Oquaga-Lackawanna channery loams, 3 to 8 percent slopes
296344	PA089	Oquaga-Lackawanna channery loams, 8 to 15 percent slopes
296346	PA089	Oquaga-Lackawanna extremely stony loams, 0 to 8 percent slopes
296347	PA089	Oquaga-Lackawanna extremely stony loams, 8 to 25 percent slopes
296348	PA089	Philo silt loam
296349	PA089	Pope silt loam
296350	PA089	Pope silt loam, high bottom
296351	PA089	Rexford gravelly silt loam, 0 to 3 percent slopes
296355	PA089	Sheffield silt loam
296363	PA089	Very stony land and Rock outcrops, steep
296369	PA089	Wayland silty clay loam
296376	PA089	Wellsboro channery loam, 3 to 8 percent slopes
296379	PA089	Wellsboro extremely stony loam, 8 to 25 percent slopes
296385	PA089	Wyoming gravelly sandy loam, 0 to 3 percent slopes
296386	PA089	Wyoming gravelly sandy loam, 3 to 8 percent slopes
296387	PA089	Wyoming gravelly sandy loam, 8 to 15 percent slopes
296388	PA089	Wyoming gravelly sandy loam, 15 to 25 percent slopes
296389	PA089	Wyoming gravelly sandy loam, 25 to 70 percent slopes
296390 (W)	PA089	Water
297185	PA103	Edgemere-Shohola complex, 3 to 15 percent slopes, very rubbly
297186	PA103	Edgemere extremely stony loam, 0 to 3 percent slopes, very rubbly
297188	PA103	Manlius-Arnot-Rock outcrop complex, 15 to 30 percent slopes, rubbly
297189	PA103	Manlius-Arnot-Rock outcrop complex, 30 to 80 percent slopes, rubbly
297190	PA103	Braceville fine sandy loam
297191	PA103	Wyalusing fine sandy loam
297192	PA103	Pope fine sandy loam
297193	PA103	Paupack mucky peat
297196	PA103	Freetown mucky peat
297197	PA103	Manlius very channery silt loam, 3 to 8 percent slopes, very bouldery
297198	PA103	Manlius very channery silt loam, 8 to 15 percent slopes, very bouldery
297201	PA103	Oquaga very stony loam, 15 to 30 percent slopes, extremely bouldery
297203	PA103	Delaware fine sandy loam, 0 to 3 percent slopes
297204	PA103	Delaware fine sandy loam, 3 to 8 percent slopes
297205	PA103	Delaware fine sandy loam, 8 to 20 percent slopes
297209	PA103	Philo loam
297210	PA103	Barbour fine sandy loam
297216	PA103	Wurtsboro stony fine sandy loam, 0 to 8 percent slopes, extremely stony
297217	PA103	Wurtsboro stony fine sandy loam, 8 to 15 percent slopes, extremely stony
297227	PA103	Arnot very channery loam, 3 to 15 percent slopes, very rocky
297228	PA103	Arnot very channery loam, 15 to 35 percent slopes, very rocky
297229	PA103	Wyoming very cobbly sandy loam, 3 to 8 percent slopes
297230	PA103	Wyoming very cobbly sandy loam, 8 to 15 percent slopes
297231	PA103	Wyoming very cobbly sandy loam, 15 to 30 percent slopes
297236	PA103	Suncook loamy sand, 0 to 8 percent slopes

Soil Map Unit Key	Soil Survey Code	Soil Map Unit Name
297237	PA103	Mardin channery silt loam, 0 to 8 percent slopes, stony
297238	PA103	Mardin channery silt loam, 8 to 15 percent slopes, stony
297239	PA103	Mardin stony loam, 0 to 8 percent slopes, extremely stony
297240	PA103	Mardin stony loam, 8 to 15 percent slopes, extremely stony
297241	PA103	Unadilla silt loam
297242	PA103	Shohola-Edgemere complex, 0 to 8 percent slopes, very rubbly
297243	PA103	Shohola-Edgemere complex, 8 to 15 percent slopes, very rubbly
297244	PA103	Lordstown-Swartswood complex, 0 to 8 percent slopes, extremely stony
297247	PA103	Chenango gravelly fine sandy loam, 0 to 8 percent slopes
297248	PA103	Chenango gravelly fine sandy loam, 8 to 15 percent slopes
297249	PA103	Chenango gravelly fine sandy loam, 15 to 25 percent slopes
297253	PA103	Craigsville-Wyoming complex, 0 to 8 percent slopes, extremely stony
297254	PA103	Pits, shale, and gravel
298049	NJ037	Wurtsboro loam, 0 to 8 percent slopes, extremely stony
298050	NJ037	Wurtsboro-Swartswood complex, 0 to 8 percent slopes, extremely stony
298051	NJ037	Wurtsboro-Swartswood complex, 8 to 15 percent slopes, extremely stony
298075	NJ037	Colonie loamy fine sand, 3 to 8 percent slopes
298188	NJ037	Lackawanna cobbly fine sandy loam, 15 to 35 percent slopes, extremely stony
298189	NJ037	Lackawanna cobbly fine sandy loam, 8 to 15 percent slopes, extremely stony
298221	NJ037	Swartswood loam, 0 to 8 percent slopes, extremely stony
298222	NJ037	Swartswood loam, 8 to 15 percent slopes, extremely stony
298223	NJ037	Swartswood loam, 15 to 35 percent slopes, extremely stony
298255	NJ037	Delaware fine sandy loam, 3 to 8 percent slopes, rarely flooded
298256	NJ037	Delaware fine sandy loam, 0 to 3 percent slopes, rarely flooded
298257	NJ037	Wallpack silt loam, 8 to 15 percent slopes
298258	NJ037	Wallpack silt loam, 15 to 25 percent slopes
298259	NJ037	Wallpack silt loam, 3 to 8 percent slopes, extremely stony
298260	NJ037	Wallpack silt loam, 8 to 15 percent slopes, extremely stony
298261	NJ037	Wallpack silt loam, 3 to 8 percent slopes
298262	NJ037	Wallpack silt loam, 15 to 35 percent slopes, extremely stony
298265	NJ037	Venango silt loam, 0 to 8 percent slopes, extremely stony
298266	NJ037	Venango silt loam, 8 to 15 percent slopes, extremely stony
298409	NJ041	Swartswood loam, 0 to 8 percent slopes, extremely stony
298411	NJ041	Swartswood loam, 8 to 15 percent slopes, extremely stony
298413	NJ041	Swartswood loam, 15 to 35 percent slopes, extremely stony
318498	NJ037	Hazen-Hoosic complex, 3 to 8 percent slopes, very stony
318533	NJ037	Hazen-Hoosic complex, 0 to 3 percent slopes, very stony
319783	NJ037	Catden mucky peat, 0 to 2 percent slopes
319784	NJ037	Fredon-Halsey complex, 0 to 3 percent slopes, very stony
543222	PA095	Andover-Buchanan gravelly loams, 0 to 8 percent slopes, extremely stony
543243	PA095	Berks-Weikert complex, 25 to 60 percent slopes
543246	PA095	Buchanan gravelly loam, 3 to 8 percent slopes
543247	PA095	Buchanan gravelly loam, 0 to 8 percent slopes, extremely stony
543257	PA095	Chippewa silt loam, 0 to 3 percent slopes
543258	PA095	Chippewa silt loam, 3 to 8 percent slopes

Soil Map Unit Key	Soil Survey Code	Soil Map Unit Name
543259	PA095	Chippewa gravelly silt loam, 0 to 8 percent slopes, extremely stony
543271	PA095	Delaware fine sandy loam, 0 to 3 percent slopes
543276	PA095	Fluvaquents
543292	PA095	Hazleton very channery loam, 8 to 25 percent slopes, extremely stony
543293	PA095	Hazleton very channery loam, 25 to 60 percent slopes, extremely stony
543299	PA095	Laidig very gravelly loam, 0 to 8 percent slopes, extremely stony
543300	PA095	Laidig very gravelly loam, 8 to 25 percent slopes, extremely stony
543304	PA095	Laidig-Rubble land complex, 25 to 60 percent slopes
543318	PA095	Rubble land
543327	PA095	Swartswood gravelly loam, 3 to 8 percent slopes
543328	PA095	Swartswood gravelly loam, 8 to 15 percent slopes
543330	PA095	Swartswood and Wurtsboro soils, 0 to 8 percent slopes, extremely stony
543331	PA095	Swartswood and Wurtsboro soils, 8 to 25 percent slopes, extremely stony
543359	PA095	Volusia gravelly silt loam, 3 to 8 percent slopes
543360	PA095	Volusia gravelly silt loam, 0 to 8 percent slopes, extremely stony
543374	PA095	Wurtsboro gravelly silt loam, 3 to 8 percent slopes
543375	PA095	Wurtsboro gravelly silt loam, 8 to 15 percent slopes
612280	NJ037	Scio silt loam, 0 to 3 percent slopes
612666	NJ037	Colonie loamy fine sand, 0 to 3 percent slopes
612668	NJ037	Hoosic-Hazen complex, 8 to 15 percent slopes, very stony
612724	NJ037	Lordstown-Wallpack complex, 15 to 35 percent slopes, very rocky
612732	NJ037	Atherton mucky silt loam, 0 to 3 percent slopes
612738	NJ037	Fluvaquents, loamy, 0 to 3 percent slopes, occasionally flooded
612753	NJ037	Wallpack fine sandy loam, aeolian mantle, 8 to 15 percent slopes, very stony
612756	NJ037	Wallpack fine sandy loam, aeolian mantle, 0 to 8 percent slopes, very stony
612757	NJ037	Wallpack fine sandy loam, aeolian mantle, 15 to 35 percent slopes, very stony
612767	NJ037	Wellsboro silt loam, 8 to 15 percent slopes, extremely stony
612768	NJ037	Wellsboro silt loam, 0 to 8 percent slopes, extremely stony
613393	NJ037	Alden silt loam, 0 to 8 percent slopes, extremely stony
613447	NJ037	Unadilla silt loam, 0 to 3 percent slopes
613448	NJ037	Unadilla silt loam, 3 to 8 percent slopes
614075	NJ037	Wurtsboro-Swartswood complex, 15 to 35 percent slopes, extremely stony
620179	NJ037	Arnot-Lordstown complex, 0 to 15 percent slopes, very rocky
620180	NJ037	Arnot-Lordstown-Rock outcrop complex, 15 to 35 percent slopes
620181	NJ037	Arnot-Lordstown-Rock outcrop complex, 35 to 60 percent slopes
623089	NJ037	Chippewa silt loam, 0 to 8 percent slopes, extremely stony
623109	NJ037	Farmington-Rock outcrop complex, 0 to 15 percent slopes
624811	NJ037	Galway loam, 35 to 60 percent slopes, very rocky
624813	NJ037	Lackawanna cobbly fine sandy loam, 0 to 8 percent slopes, extremely stony
624816	NJ037	Lordstown-Wallpack complex, 8 to 15 percent slopes, very rocky
624822	NJ037	Lordstown-Wallpack complex, 15 to 25 percent slopes
624823	NJ037	Lordstown-Wallpack complex, 8 to 15 percent slopes
624824	NJ037	Lordstown-Wallpack complex, 0 to 8 percent slopes
624826	NJ037	Manlius-Nassau complex, 35 to 60 percent slopes, very rocky
624827	NJ037	Nassau-Manlius complex, 0 to 8 percent slopes, very rocky

Soil Map Unit Key	Soil Survey Code	Soil Map Unit Name
624828	NJ037	Nassau-Manlius complex, 8 to 15 percent slopes, very rocky
624829	NJ037	Nassau-Manlius complex, 15 to 35 percent slopes, very rocky
624832	NJ037	Nassau-Rock outcrop complex, 35 to 60 percent slopes
624841	NJ037	Oquaga-Rock outcrop complex, 35 to 60 percent slopes
624845	NJ037	Rock outcrop-Farmington-Galway complex, 15 to 35 percent slopes
624846	NJ037	Rock outcrop-Arnot-Rubble land complex, 60 to 80 percent slopes
626816	NJ037	Udifluvents, 0 to 3 percent slopes, occasionally flooded
635458	NJ037	Oquaga-Lackawanna complex, 8 to 15 percent slopes, very rocky
635459	NJ037	Oquaga-Lackawanna complex, 15 to 35 percent slopes, very rocky
740953	NJ041	Delaware fine sandy loam, 0 to 3 percent slopes, rarely flooded
740968	NJ041	Nassau-Manlius complex, 8 to 15 percent slopes, very rocky
740969	NJ041	Nassau-Manlius complex, 15 to 35 percent slopes, very rocky
740971	NJ041	Oquaga-Lackawanna complex, 8 to 15 percent slopes, very rocky
740972	NJ041	Oquaga-Lackawanna complex, 15 to 35 percent slopes, very rocky
740974	NJ041	Oquaga-Rock outcrop complex, 35 to 60 percent slopes
740975	NJ041	Rock outcrop-Arnot-Rubble land complex, 60 to 80 percent slopes
740987	NJ041	Scio silt loam, 0 to 3 percent slopes
740988	NJ041	Udifluvents, 0 to 3 percent slopes, occasionally flooded
740991	NJ041	Unadilla silt loam, 0 to 3 percent slopes
740992	NJ041	Unadilla silt loam, 3 to 8 percent slopes
740995	NJ041	Wellsboro silt loam, 0 to 8 percent slopes, extremely stony
740996	NJ041	Wellsboro silt loam, 8 to 15 percent slopes, extremely stony
741149	NJ041	Lackawanna cobbly fine sandy loam, 8 to 15 percent slopes, extremely stony
741150	NJ041	Lackawanna cobbly fine sandy loam, 15 to 35 percent slopes, extremely stony
801114	NJ037	Oquaga-Rock outcrop complex, 0 to 15 percent slopes
810906	NJ041	Oquaga-Rock outcrop complex, 0 to 15 percent slopes
1147465	NJ041	Alden silt loam, 0 to 8 percent slopes, extremely stony
1147467	NJ041	Arnot-Lordstown complex, 0 to 15 percent slopes, very rocky
1147468	NJ041	Arnot-Lordstown-Rock outcrop complex, 15 to 35 percent slopes
1147469	NJ041	Arnot-Lordstown-Rock outcrop complex, 35 to 60 percent slopes
1147470	NJ041	Atherton mucky silt loam, 0 to 3 percent slopes
1147471	NJ041	Catden mucky peat, 0 to 2 percent slopes
1147474	NJ041	Chippewa silt loam, 0 to 8 percent slopes, extremely stony
1147475	NJ041	Colonie loamy fine sand, 0 to 3 percent slopes
1147478	NJ041	Delaware fine sandy loam, 3 to 8 percent slopes, rarely flooded
1147482	NJ041	Fredon-Halsey complex, 0 to 3 percent slopes, very stony
1147485	NJ041	Hazen-Hoosic complex, 3 to 8 percent slopes, very stony
1147490	NJ041	Hoosic-Hazen complex, 8 to 15 percent slopes, very stony
1147491	NJ041	Hoosic-Otisville complex, 25 to 60 percent slopes, very stony
1147492	NJ041	Lackawanna cobbly fine sandy loam, 0 to 8 percent slopes, extremely stony
1147500	NJ041	Wurtsboro loam, 0 to 8 percent slopes, extremely stony
1147501	NJ041	Wurtsboro-Swartswood complex, 0 to 8 percent slopes, extremely stony
1147502	NJ041	Wurtsboro-Swartswood complex, 8 to 15 percent slopes, extremely stony
1147527	NJ041	Udorthents-Urban land complex, 0 to 8 percent slopes
1147532	NJ041	Udorthents, 0 to 8 percent slopes, smoothed



Soil Map Unit Key	Soil Survey Code	Soil Map Unit Name
1147533	NJ041	Wurtsboro-Swartswood complex, 15 to 35 percent slopes, extremely stony
1948749	PA095	Arnot channery silt loam, 3 to 8 percent slopes
1948750	PA095	Arnot channery silt loam, 8 to 15 percent slopes
1948751	PA095	Arnot channery silt loam, 15 to 25 percent slopes
1948774	PA095	Conotton gravelly loam, 3 to 8 percent slopes
1948775	PA095	Conotton gravelly loam, 8 to 15 percent slopes
1948776	PA095	Conotton gravelly loam, 15 to 25 percent slopes
1948777	PA095	Conotton gravelly loam, 25 to 65 percent slopes
1948797	PA095	Manlius channery silt loam, 3 to 8 percent slopes
1948802	PA095	Manlius channery silt loam, 8 to 15 percent slopes
1948818	PA095	Manlius channery silt loam, 15 to 25 percent slopes
1948832	PA095	Penargyl channery silt loam, 3 to 8 percent slopes
1948846	PA095	Phelps gravelly silt loam, 3 to 8 percent slopes
1948855	PA095	Udorthents, loamy
1948989	PA095	Urban land-Delaware complex, 0 to 8 percent slopes